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ABSTRACT

This report considers the interaction of gender and racial/ethnic differences by addressing the issue of whether gender differences vary within racial/ethnic groups. The data encompass the education and work pipeline from elementary school, through high school, college, and graduate school, and into the workforce. Data come from a variety of sources. Results of the National Assessment of Educational Progress and findings about admissions tests, high school course work, advanced placement tests, educational attainment, and earnings and employment reveal more similarities than variations in gender differences among racial/ethnic groups. On most measures, gender differences did not vary much from one racial/ethnic group to another, although some differences were found. In addition, few trends were noted. The study suggests that the nature of gender inequality is a complex phenomenon. There is neither a pattern of across-the-board male advantage nor a pattern of across-the-board female advantage. The findings do not support the view that the educational establishment systematically discriminates against girls, nor that it penalizes boys. Data support the view that the nature of the differences between genders or the lack of difference depends on the outcome being examined. (Contains 25 graphs.) (SLD)

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POLICY INFORMATION REPORT

# Differences in the Gender Gap:

## Comparisons Across Racial/Ethnic Groups in Education and Work

ED 451 222

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**This report was written by:**

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**February 2001**

# Preface

Over the past dozen years, the ETS Policy Information Center has produced several kinds of reports, including policy perspectives drawn from research, analyses of policy issues based on large-scale databases, case studies of promising practices, and workbooks to help practitioners. From time to time the center has also identified areas where there was little data available on important matters, and tried to fill the void. For example, in the last decade the center issued a report on the frequency and types of test taking in our schools, a report on what courses high school students study, and a report titled *Diversity Among Asian American High School Students*. It was supposed by many that Asian American students were all high-achieving, and a stereotype had developed, while, in fact, there is considerable diversity within this population.

This report by Richard J. Coley, *Differences in the Gender Gap: Comparisons Across Racial/Ethnic Groups in Education and Work*, is a similar effort to fill a data void. There has been extensive analysis of gender differences in the testing and educational sphere, but these have been based on the total population, which largely reflects the White population. A recent, comprehensive analysis by Warren Willingham and Nancy Cole of Educational Testing Service asks the question: "Are there comparable patterns of gender difference and similarity of test performance across ethnic groups?" The answer they gave was that there was "surprisingly little analysis of gender differences *within* ethnic groups." In this report, Coley brings together information on gender differences among racial and ethnic groups in the areas of education, testing, and employment.

There have, of course, been many reports and analyses of the differences between the White majority and minority groups in terms of achievement in the education and employment worlds, and the ETS Policy Information Center has issued many such reports. This report, on the other hand, compares males and females *within* racial and ethnic groups. We should not presume that what is true in the White population is true in all other groups. As it turns out from the data provided in this report, it is often, but not always, similar.

*Paul Barton*
*ETS Policy Information Center*

# Acknowledgments

Because this report is composed of a variety of data from many sources, thanks are due to many individuals for their cooperation and advice. Much of the data in the report are from the National Assessment of Educational Progress, conducted by the National Center for Education Statistics of the U.S. Department of Education. Likewise, a considerable portion of the data contained in the report are from programs of the College Board® and Educational Testing Service®. The willingness of these institutions to share their data is appreciated.

The author would like to acknowledge the help of the following reviewers, although it is unlikely that all would be entirely satisfied with the finished product, and any errors of fact or judgment are the responsibility of the author. This report benefited from the reviews and comments of Thomas Snyder of the National Center for Education Statistics and Gita Wilder of the Law School Admissions Council. At ETS®, the report (or portions of it) were reviewed by Paul Barton, Brent Bridgeman, Kevin Cureton, Rob Durso, Drew Gitomer, Ida Lawrence, Anne Ninneman, John Mazzeo, Rick Morgan, Howard Wainer, Cathy Wendler, and Harold Wenglinsky. Amanda McBride was the editor, Carla Cooper provided desk-top publishing services, Marita Gray designed the cover, and Kathleen Benischeck coordinated production.

# Executive Summary

Much of the policy debate in education over the past several decades has focused on racial/ethnic and gender differences in educational opportunities and outcomes. These familiar discussions, and the data that inform them, tend to examine either racial/ethnic differences across populations, or gender differences across populations, to the exclusion of the other. This report takes a different approach by capturing the interaction of gender and racial/ethnic differences by addressing the issue of whether gender differences vary *within* racial/ethnic groups.

While analyses and comparisons of gender differences within racial/ethnic groups are rarely undertaken, they are nonetheless important in attempting to understand differences in educational achievement and opportunity across racial/ethnic groups. As a beginning step in providing the information necessary to address this issue, this report provides a compendium of comparisons that describe the differences between males and females within racial/ethnic groups on a number of important education-related domains. The data presented encompass the education and work pipeline from elementary school, through high school, college, and graduate school, and into the workforce. Trends are noted, usually over a decade or more. The major findings are summarized below.

### K–12 Test Results from the National Assessment of Educational Progress

- Females scored higher than males in NAEP reading, across all racial/ethnic groups.
- Females scored higher than males in NAEP writing, across all racial/ethnic groups.
- Black and Hispanic eighth-grade females scored higher in NAEP civics than Black and Hispanic males. Twelfth-grade Hispanic females also outscored Hispanic males.
- Differences in NAEP science were most apparent for White and Hispanic students, where males scored higher than females.
- White fourth-grade males scored higher in NAEP mathematics than female fourth-graders in 1992 and 1996. For all racial/ethnic groups, any gender differences in grades 8 and 12 disappeared by 1996.

### Admissions Tests

- Black college-bound seniors were the only group where females scored higher than males on the SAT® I Verbal Test.
- On the SAT I Mathematics Test, males in all racial/ethnic groups scored higher than females.
- In all racial/ethnic groups, males scored higher than females on the GRE® Verbal, Quantitative, and Analytic Tests.
- Across all racial/ethnic groups, males had higher GMAT® scores than females.

### High School Course Work

- Across all racial/ethnic groups, female college-bound seniors who took the SAT were more likely than males to accumulate 20 years of course work in six academic subjects in high school (a summary measure of course taking).
- Across all racial/ethnic groups, female college-bound seniors are catching up with males in taking four years of math. In 1999, White, Black, and Asian/Pacific Islander females pulled even with males.
- In all racial/ethnic groups, female college-bound seniors have made significant progress over the decade in taking four years of science in high school, and have just about caught up with males.

### Advanced Placement

Data on the number of high school students taking AP® Examinations were examined along with performance on three AP Examinations — Literature and Composition, Biology, and Calculus AB.

- Across all racial/ethnic groups, more females than males took Advanced Placement Examinations. The difference was greatest for Black students. For all groups, female representation among AP test takers increased over the past decade.

- Across all racial/ethnic groups, there was little difference between males and females in the percentage who scored high on the AP Literature and Composition Examination.

- Males in all racial/ethnic groups were more likely than females to score high in AP Biology.

- Across all racial/ethnic groups, males were more likely than females to score high in AP Calculus AB.

**Educational Attainment**

- For White and Hispanic 25- to 29-year-olds, females passed males in the percentage completing high school or more, and the trend appears to be increasing. For Blacks, there is no gender gap and no trend.

- The advantage held by males in college completion during the early 1970s ended by the early 1990s for all racial/ethnic groups. By 1998, White, Black, and Hispanic females held an advantage of a few percentage points over males.

**Earnings and Employment**

- Black, Hispanic, and White male high school graduates earned more than females, but the gap has decreased. White males had the largest income advantage.

- Black, Hispanic, and White male college graduates earned more than females, but the gap has decreased. White males had the largest income advantage.

- Among all racial/ethnic groups, males were more likely than females to be employed, but the gap has closed, and is nearly closed for Blacks. However, White and Hispanic females still lag considerably behind their male counterparts.

In brief, this comparison revealed more similarities than variations in gender differences among racial/ethnic groups. On most measures, gender differences did not vary much from one racial/ethnic group to another, although some differences were found. In addition, few trends were noted.

This study suggests that the nature of gender inequality in education is a complex phenomenon. There is neither a pattern of across-the-board male advantage nor a pattern of across-the-board female advantage. Rather, females are outperforming males in some respects, and in others, males are outperforming females. Indeed, for some indicators there are no gender differences at all. This apparent variation supports neither the view that the educational establishment systematically discriminates against females, nor the view that the system is conspiring to wage a war against boys. Rather, the data support the more moderate view that these gender differences are complicated and that the nature of the difference or lack of difference depends on the type of outcome examined.

While the picture of gender differences in general proved complex, the picture of differences in gender differences across racial/ethnic groups proved simpler. By and large, gender differences do not seem to vary much by race/ethnicity. This cross-cutting nature of gender differences across groups suggests that policies to remedy educational inequalities must treat gender, as well as race/ethnicity, as a crucial factor.

# Introduction

Much of the prominent debate in the education community for decades has focused on the access of females to equal educational opportunity. Are females treated differently than males in early elementary school classes? Are females discouraged from taking math and science courses in high school? Are expectations for higher education and subsequent job market success lower for females than for males?

Representing one side of the debate are analyses that allege systematic discrimination against females in the nation's classrooms. For instance, Sadker and Sadker (1994) suggest that the classroom practices of elementary and secondary school teachers put boys at an advantage over girls.[1]

Others argue that it is boys who are at a disadvantage in the educational system. Christina Hoff Sommers, writing in the May 2000 issue of *The Atlantic Monthly*, notes that "it's a bad time to be a boy in America." She cites the Columbine tragedy as symbolizing the spirit of boys and the World Cup women's soccer victory as symbolizing the spirit of American girls. She goes on to note that the typical boy is a year and a half behind the typical girl in reading and writing; he is also less committed to school and less likely to go to college.[2] In support of this contention, Thomas G. Mortenson writes that, "at every key measurement point along the educational pipeline leading to a bachelor's degree, females have surpassed males during the last 25 years."[3] He also follows the trend line for bachelor's degrees to its logical, if unlikely, conclusion that if the trend since 1970 continues, the last male to be awarded a bachelor's degree will receive it in the spring of 2067.[4]

There is a substantial body of data and research about gender differences in education and work, in achievement, and also in cognitive functioning. A brief summary of some of this research is provided below.

A recent publication by the National Center for Education Statistics, *Trends in Educational Equity of Girls and Women*, reviewed 44 indicators and reached the following conclusions:

- Girls and boys start school with similar experiences.
- In the early school years, girls are less likely than boys to repeat grades and have problems in school.
- Girls outperform boys in reading and writing.
- Girls lag behind boys in mathematics and science.
- Girls have higher educational aspirations than boys and are more likely to enroll in and graduate from college.
- Girls are more likely to major in subjects leading to lower paying fields and less likely to major in engineering, physics, and computer science.
- Women are less likely than men to be employed, although the gap has narrowed.
- Women earn less than men with similar educational attainment.[5]

At Educational Testing Service, a major project was undertaken by Warren Willingham and Nancy Cole during the late 1990s to understand differences in the test performance of women and men and what can be learned from that understanding that could facilitate

1 Myra Sadker and David Sadker, *Failing at Fairness: How America's Schools Cheat Girls*, New York: Scribner's, 1994.

2 Christina Hoff Sommers, "The War Against Boys," *The Atlantic Monthly*, May 2000.

3 Thomas G. Mortenson, "Where Are the Boys? The Growing Gender Gap in Higher Education," *The College Board Review*, No. 188, August 1999.

4 Thomas G. Mortenson, "Where Are the Guys?" *Postsecondary Education OPPORTUNITY*, No. 76, Oskaloosa, Iowa, September 1998.

5 U.S. Department of Education, National Center for Education Statistics, *Educational Equity for Girls and Women*, NCES 2000-030, by Yupin Bae, Susan Choy, Claire Geddes, Jennifer Sable, and Thomas Snyder. Washington, D.C.: U.S. Government Printing Office, 2000.

the design of fair assessments in the future. This study compared student performance on a wide range of tests, from the SAT to NAEP.[6]

Differences between men and women in cognitive or problem-solving abilities have been identified. A very brief summary is provided below. (Those interested in a much fuller discussion are referred to Doreen Kimura's recent book, *Sex and Cognition*.[7])

- Men are better than women at most kinds of targeting ability, like throwing darts.
- Women tend to be faster than men in fine motor skills, especially those involving the fingers.
- Most spatial tests, particularly imaginal rotation and targeting, show some advantage for men.
- Women are generally better than men at recalling the positions of objects in an array, and at remembering landmarks along a route.
- Men tend to get higher scores on mathematical reasoning or problem-solving aptitude tests, while women do better on tests involving computation.
- Women appear to be more sensitive to external stimuli than men in all modalities except vision, where the picture is more mixed. Women are consistently better than men at reading facial and body expressions.
- Women perform better than men on tasks of verbal memory.

Discussions about the causes of these differences remain controversial, as does any discussion of gender differences in education and society. Causes become important as they focus, limit, or expand the policies and actions that policymakers and educators take in response to the problem. A reasonably balanced and thoughtful summary of the evidence is provided by Gita Wilder:

> *. . . There are strong research traditions in both the biological bases of gender-differentiated behavior and the social construction of gender . . . There is no simple account of the antecedents of sex differences in test performance. Rather, performance differences surface as the product of multiple forces that interact over time and in complex fashion. There are unquestionably important biological—genetic, hormonal, possibly brain-functional—differences that exist between males and females. These differences are manifested differently at different stages of development, and are themselves manifestations of complex interactions of genetic, hormonal, and environmental factors.*[8]

Whatever the causes of these differences between males and females, Willingham and Cole (1997) point out that individual women and men vary far more than do the two groups on virtually any measure that one might choose. Gender differences in achievement are usually small on most individual measures, and there is substantial overlap in the distribution of male and female scores. Similarly, subgroups of women and men may vary according to background characteristics, like race/ethnicity.

This report builds on the Willingham and Cole work. Like that study, this report will present up-to-date information on gender differences on various tests. In addition, the report will take the suggestion of the Willingham and Cole study that gender differences may differ by race/ethnicity. This report will also examine gender differences in some noncognitive areas, such as educational attainment, employment, and income.

6 Warren W. Willingham and Nancy S. Cole, *Gender and Fair Assessment*, Educational Testing Service, Princeton, NJ. Mahwah, NJ: Lawrence Erlbaum Associates, 1997.

7 Doreen Kimura, *Sex and Cognition*, Cambridge and London: The MIT Press, 1999.

8 Gita Z. Wilder, *Antecedents of Gender Differences*, report commissioned by Educational Testing Service as part of the Gender and Fair Assessment project, May 1997.

The variables presented in this report were selected based upon their availability (by gender, race/ethnicity, and trend) and their relevance to assessing the status of groups in education and employment situations. Data reflecting national samples like the National Assessment of Educational Progress (NAEP) and the U.S. Census are used, as are data based on self-selected samples like SAT and GRE test takers. The data presented encompass the education and work pipeline from the fourth grade, through high school, college, and graduate school, and into the workforce up until the age of 54. This report also presents the data over time, usually a decade or more.

Common racial/ethnic breakdowns are usually available for Blacks, Hispanics, and Whites. Data for Asian Americans and American Indians are less frequently available, but are provided when they are. Whenever possible, this analysis has disaggregated data on Hispanics to describe as many subgroups as possible. While the report tries to use terminology that describes these groups accurately and consistently, several obstacles arise. Some testing programs and publications use different terminology, with sometimes different meanings, to describe different racial/ethnic groups. In addition, terminology used in a data source can change over time. For these reasons, this report uses the terms used in the data source to describe the groups of interest.

What will not be focused on here are absolute score differences between racial/ethnic groups. While the differences that exist continue to be critical to the increasingly multicultural U.S. society, and to this nation's equity goals, analyses of these differences can be found elsewhere.[9]

The data in this report include the following:

- NAEP results in reading, writing, civics, math, and science
- Test scores from the SAT I, GRE, and GMAT
- Course taking among college-bound seniors
- Participation and examination grades in the Advanced Placement Program
- Educational attainment
- Earnings for high school and college graduates
- Employment ratios

The focus is on comparisons of differences in gender differences among racial/ethnic groups, and how these *differences* may have changed over time. For example, how does the difference in the high school course taking of Black males and females compare with the difference between Hispanic males and females; and how has this changed over time.

Each topic is introduced by a general discussion on the left-hand page, along with some general findings, notes about the data, and information on the source of the data. One or more graphical displays are provided on the subsequent page or pages that highlight the main finding and show the trends in differences for the variable.

The data are displayed in two ways. For some variables, the difference between the percentage of males and females is used. This is the method used, for example, to show the difference between males and females in the percentage taking four years of math. In other cases, differences are expressed as the ratio of the male to female value. This is the method used to show differences in income, for example. A ratio of 1 would indicate equity.

Finally, the reader is cautioned about interpreting the results of this analysis. Since the focus is on gender differences within a racial/ethnic group, parity between males and females (or movement in that direction) may not be the ultimate goal. The fact that an equal percentage of American Indian males and females take four years of science in high school should not lessen the concern that these students are less likely than students in other groups to take a lot of science in high school.

9 See, for example, U.S. Department of Education, National Center for Education Statistics, *The Condition of Education 2000*, NCES 2000-062, Washington, DC: U.S. Government Printing Office, 2000. The NCES home page is http://nces.ed.gov. Also see Wayne J. Camara and Amy Elizabeth Schmidt, *Group Differences in Standardized Testing and Social Stratification*, The College Board, 1999.

Ultimately, the goal is to have all students, regardless of their race/ethnicity or sex, achieve to their highest potential. The reader is also cautioned about drawing conclusions from the trend data provided from self-selected samples (like SAT I and AP test takers), which can be quite small and vary in number from year to year.

# NAEP Reading

The reading proficiency of U.S. students was assessed by the National Assessment of Educational Progress (NAEP) most recently in 1992, 1994, and 1998, at grades 4, 8, and 12.

Figure 1 shows differences in average reading scores for each racial/ethnic group. At grade 4, across all three assessment periods, White, Black, and Hispanic females outperformed their male counterparts. In 1998, the female advantage was 8 points for Hispanic females and 6 points for Black females and for White females. (The Black female advantage has decreased over time.) For Asian/Pacific Islander fourth-graders, there were no statistically significant differences between males and females in reading.

Among eighth-graders, females outperformed males in each assessment year, for all racial/ethnic groups. For all groups, the female advantage was between 13 and 17 points, with little change across the assessment periods.

At grade 12, the pattern was nearly identical to that of grade 8, with females in all racial/ethnic groups outperforming their male counterparts, except that in 1994 there was no statistically significant difference between the performance of Asian/Pacific Islander males and females. In 1998, the largest differences favored Black (17 points), White (16 points), and Hispanic (15 points) females. The advantage for Asian/Pacific Islander females was 11 points.

**Notes and sources:**

The National Assessment of Educational Progress (NAEP) is the only nationally representative and continuing assessment of what America's students know and can do in various subject areas. Since 1969, assessments have been conducted periodically in reading, mathematics, science, writing, history, geography, and other fields.

For more results from the NAEP reading assessment see U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, *The NAEP 1998 Reading Report Card for the Nation and the States*, NCES 1999-500, by P. L. Donahue, K. E. Voelkl, J. R. Campbell, and J. Mazzeo. Washington, DC: 1999.

Data for Figure 1 are from *http://nces.ed.gov/nationsreportcard/TABLES/index.shtml*

The horizontal bars in Figure 1 show the difference between the average NAEP reading score for males and females in scale points. The scale for NAEP Reading is 0 – 500.

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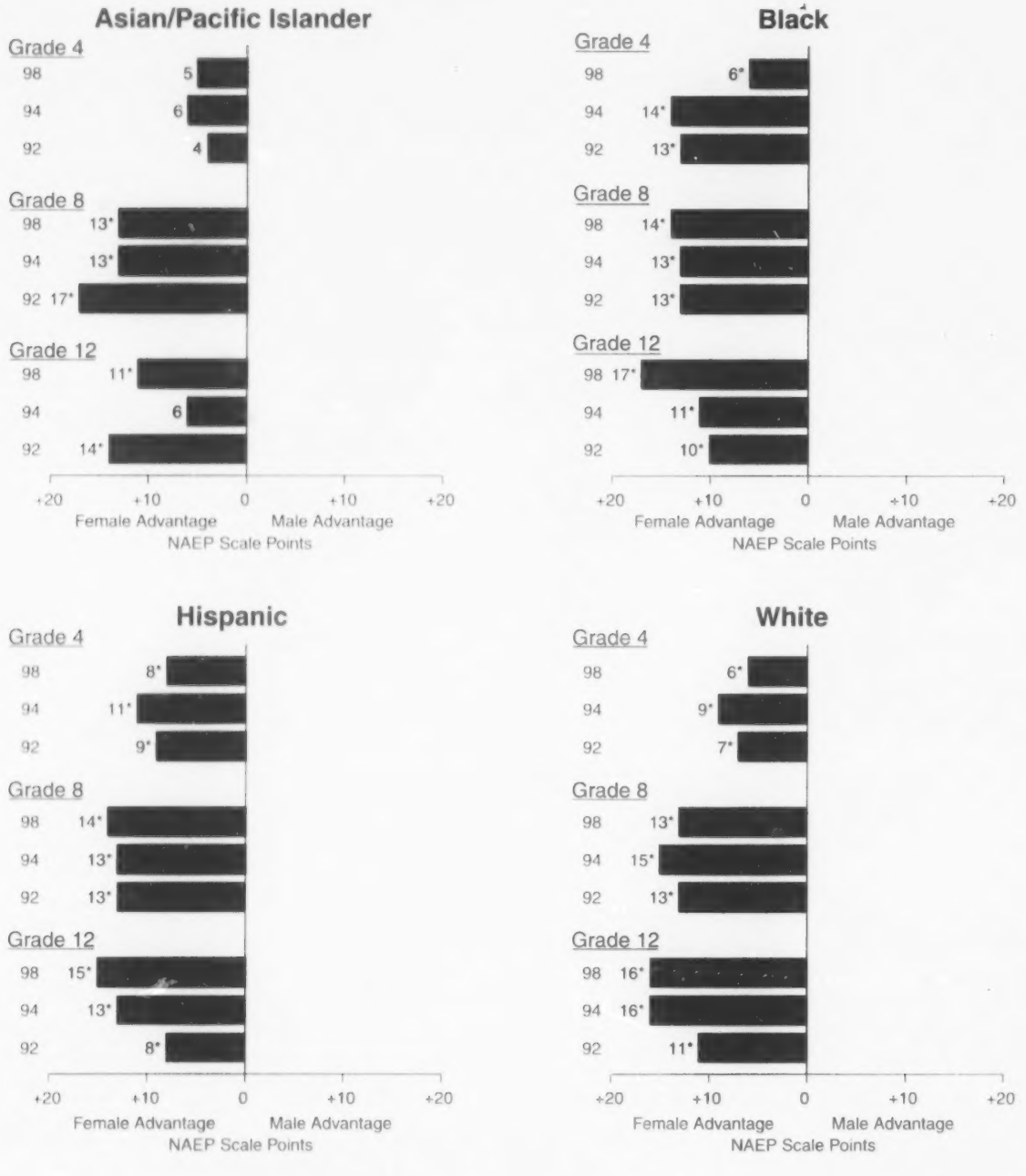
**Females scored higher than males in NAEP Reading across all racial/ethnic groups.**

Figure 1: Differences in Average NAEP Reading Scores, by Race/Ethnicity and Sex, 1992, 1994, and 1998




*Statistically significant difference between males and females

# NAEP Writing

The most recent NAEP assessment of U.S. students' writing skills at grades 4, 8, and 12 took place in 1998. At all three grades, female students had higher average writing scale scores than their male peers. In addition, the percentage of females who scored at or above the Basic and Proficient achievement levels, and at the Advanced level, was higher than that of males.

As shown in Figure 2, this pattern held for all racial/ethnic groups. Within each group, females had higher average scale scores than males. White, Black, Hispanic, Asian/Pacific Islander, and American Indian females scored higher than their male counterparts at grades 4, 8, and 12.

Notes and sources:

The National Assessment of Educational Progress (NAEP) is the only nationally representative and continuing assessment of what America's students know and can do in various subject areas. Since 1969, assessments have been conducted periodically in reading, mathematics, science, writing, history, geography, and other fields.

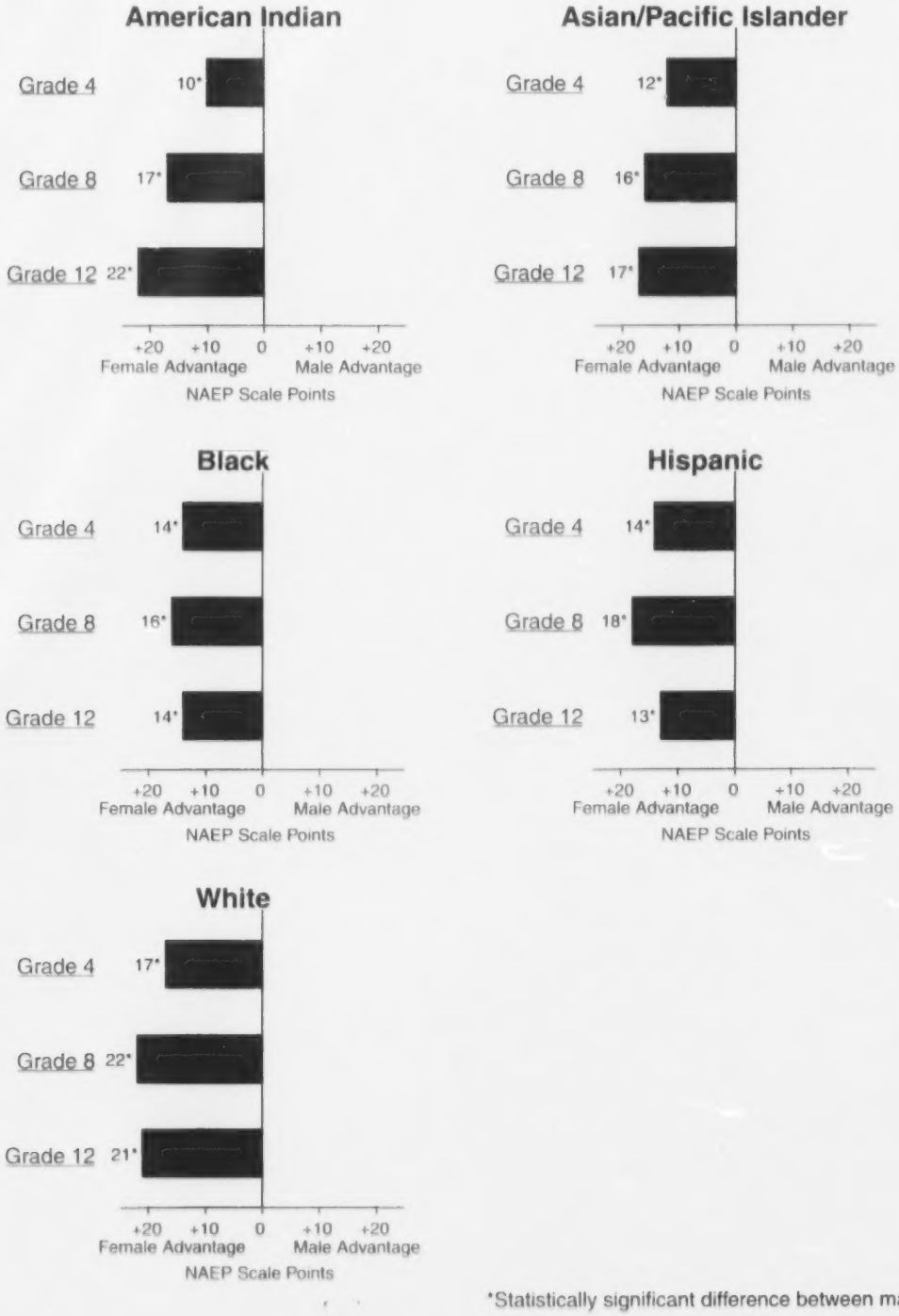
For more results from the NAEP writing assessment, see U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, *The NAEP 1998 Writing Report Card for the Nation and the States*, NCES 1999–462, by E. A. Greenwald, H. R. Persky, J. R. Campbell, and J. Mazzeo. Washington, DC: 1999.

Data for Figure 2 are from *http://nces.ed.gov/nationsreportcard/TABLES/index.shtml*.

The horizontal bars in Figure 2 show the difference between the average NAEP Writing score for males and females in scale points. The scale for NAEP Writing is 0 – 300, with a mean of 150.

**Females scored higher than males in NAEP Writing across all racial/ethnic groups.**

Figure 2: Differences in Average NAEP Writing Scores, by Race/Ethnicity and Sex, 1998




*Statistically significant difference between males and females

# NAEP Civics

In 1998, NAEP assessed the civics achievement of students at grades 4, 8, and 12. As shown in Figure 3, among racial/ethnic groups, Black and Hispanic eighth-grade females outperformed Black and Hispanic eighth-grade males, and Hispanic twelfth-grade females outperformed Hispanic twelfth-grade males. The largest difference is for Hispanic students, where females scored 8 and 10 points higher than males at grades 8 and 12, respectively.

**Notes and sources:**

The National Assessment of Educational Progress (NAEP) is the only nationally representative and continuing assessment of what America's students know and can do in various subject areas. Since 1969, assessments have been conducted periodically in reading, mathematics, science, writing, history, geography, and other fields.

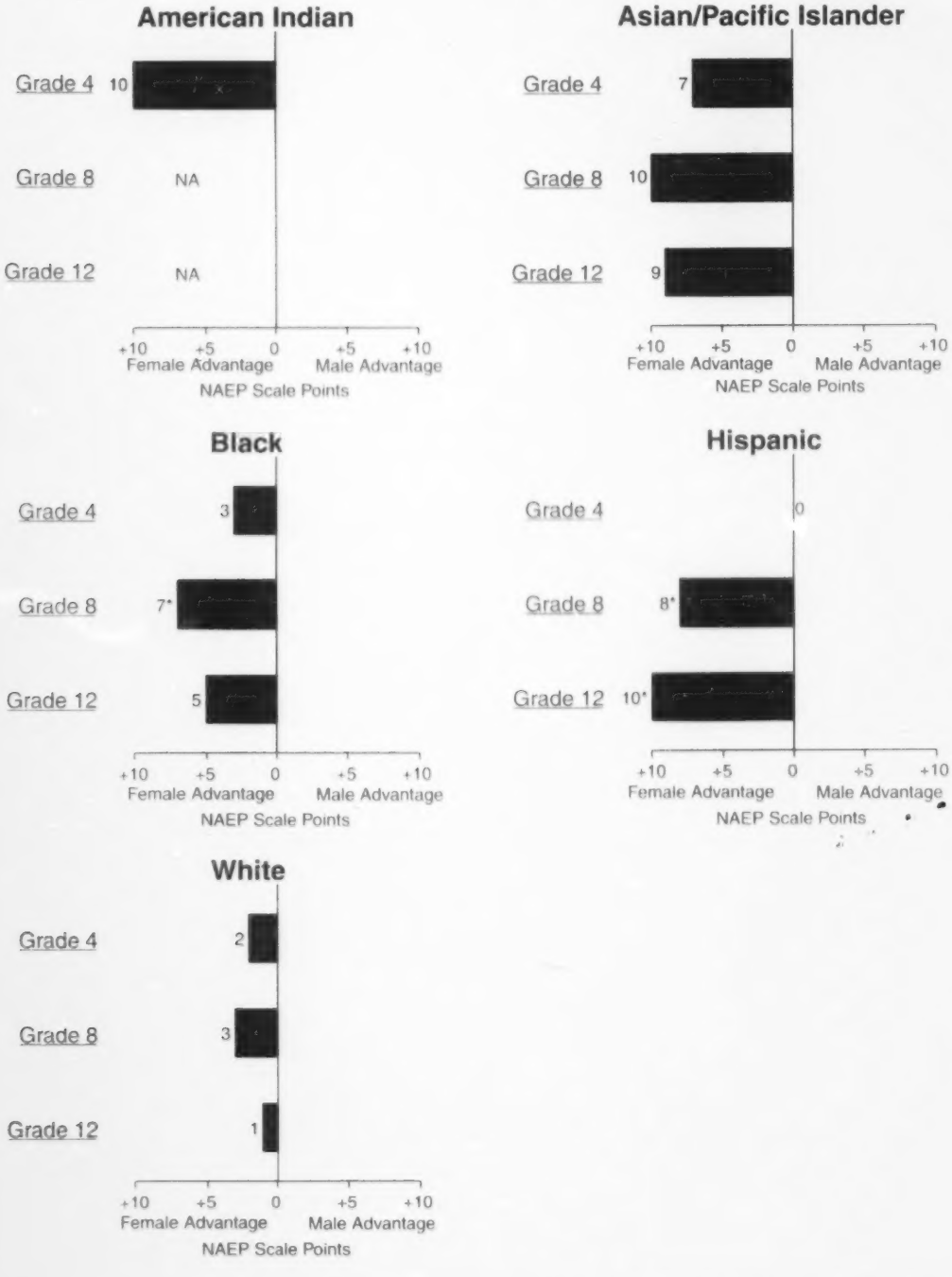
The *NAEP Civics Framework* was newly written for the 1998 assessment, as were all of the assessment questions. Therefore, it is not possible to compare results from the 1998 assessment to the results of previous civics assessments.

Date are from: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, *The NAEP 1998 Civics Report Card for the Nation*, NCES 2000–457, by A. D. Lutkus, A. R. Weiss, J. R. Campbell, J. Mazzeo, and S. Lazer, Washington, DC: 1999.

The horizontal bars in Figure 3 show the difference between the average NAEP Civics score for males and females in scale points. The scale for NAEP Civics is 0 – 300, with a mean of 150.

**Black and Hispanic eighth-grade females scored higher in NAEP Civics than Black and Hispanic males.**
**Twelfth-grade Hispanic females also scored higher than Hispanic males.**

Figure 3: Differences in Average NAEP Civics Scores, by Race/Ethnicity and Sex, 1998




*Statistically significant difference between males and females

# NAEP Science

NAEP science assessment data are examined for 1986, 1990, 1992, 1994, and 1996. Figure 4 shows average NAEP science score differences among racial/ethnic groups. At age 9, White males scored higher in science than did White females in 1986, 1990, and 1992. In the past two assessments (1994 and 1996), however, females scored as well as males. For Black 9-year-olds, females outperformed males in 1990; for Hispanic 9-year-olds, males outperformed females in 1990 only. In the other years, there were no statistically significant score differences in science.

Among 13-year-old students, White males scored higher than White females in science across all assessment years since 1986. For Black and Asian/Pacific Islander students, there were no gender differences in science in any of the years examined. Among Hispanic 13-year-olds, the only gender difference was observed in 1990, when males scored higher than females.

Among 17-year-olds, White males scored higher than White females in science across all assessment years since 1986. Among Black and Asian/Pacific Islander 17-year-olds, there were no gender differences in science in any of the years examined. Hispanic males, however, scored higher than Hispanic females in 1986, 1992, and 1996.

**Notes and sources:**

The National Assessment of Educational Progress (NAEP) is the only nationally representative and continuing assessment of what America's students know and can do in various subject areas. Since 1969, assessments have been conducted periodically in reading, mathematics, science, writing, history, geography, and other fields.

For more results from the NAEP science assessment, see J. R. Campbell, K. E. Voelkl, and P. L. Donahue, *NAEP 1996 Trends in Academic Progress*, Washington, DC: National Center for Education Statistics, 1997.

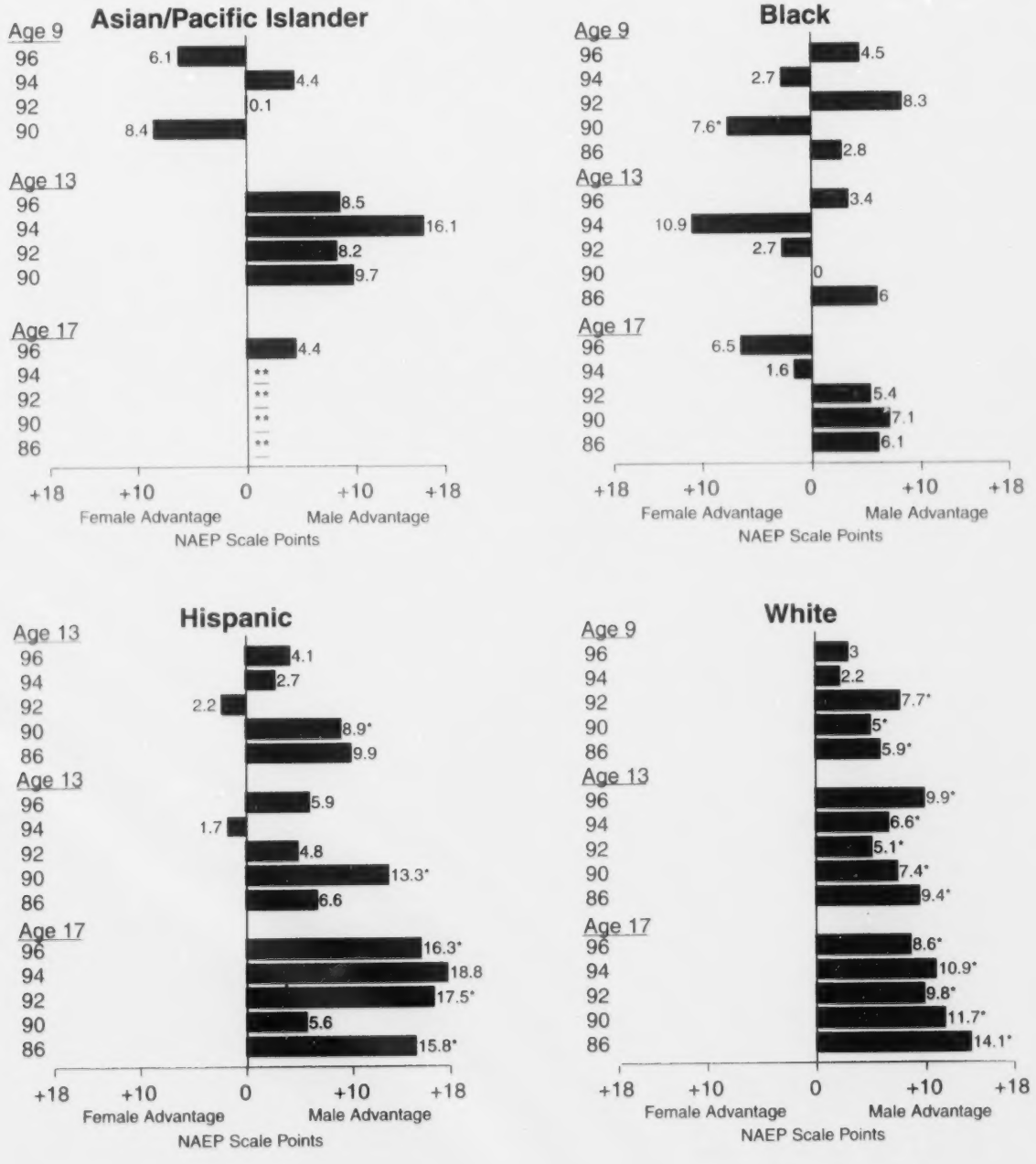
Data for Figure 4 are from *http://nces.ed.gov/nationsreportcard/TABLES/index.shtml*

NAEP most recently assessed science achievement in 1999. These data have not been released as of this time.

The horizontal bars in Figure 4 show the difference between the average NAEP Science score for males and females in scale points. The scale for NAEP Science is 0 – 500.

**Most of the gender differences in NAEP Science were for White and Hispanic students, where males scored higher than females.**

Figure 4: Trends in Differences in Average NAEP Science Scores, by Race/Ethnicity and Sex, 1986, 1990, 1992, 1994, and 1996




*Statistically significant difference between males and females

**Insufficient cell size

# NAEP Mathematics

The most recent NAEP assessment in mathematics was conducted in 1996 and provides trend data for 1990, 1992, and 1996.

At grade 4, the only gender difference among racial/ethnic groups was for White students. In both 1996 and 1992, males outscored females. These data are shown in Figure 5.

At grade 8, there were no statistically significant gender differences for any of the racial/ethnic groups in any of the years examined.

For White students, at grade 12, males outscored females in 1990 and 1992, but that gap closed in 1996. There were no gender differences in 1996 for any racial/ethnic group. For Black students, the advantage held by males in 1990 disappeared in subsequent assessments.

**Notes and sources:**

The National Assessment of Educational Progress (NAEP) is the only nationally representative and continuing assessment of what America's students know and can do in various subject areas. Since 1969, assessments have been conducted periodically in reading, mathematics, science, writing, history, geography, and other fields.

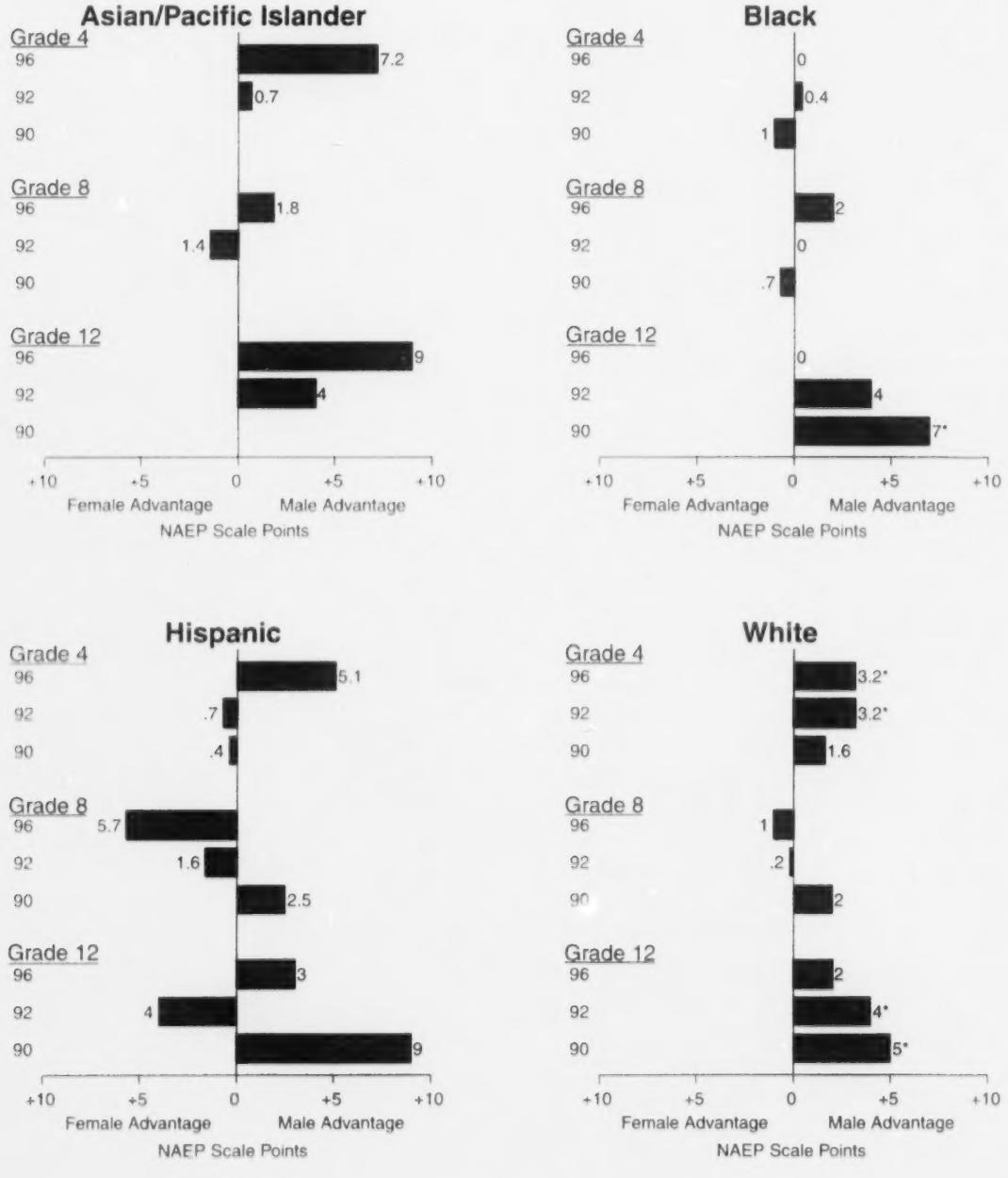
For more results from the NAEP mathematics assessment, see C. M. Reese, K. E. Miller, J. Mazzeo, and J. A. Dossey, *NAEP 1996 Mathematics Report Card for the Nation and the States*, Washington, DC: National Center for Education Statistics, 1997.

Data for Figure 5 are from *http://nces.ed.gov/nationsreportcard/TABLES/index.shtml*

The horizontal bars in Figure 5 show the difference between the average NAEP Mathematics score for males and females in scale points. The scale for NAEP Mathematics is 0 – 500.

**White fourth-grade males scored higher in NAEP Mathematics than White fourth-grade females in 1992 and 1996.**
**For all racial/ethnic groups, any gender difference at grade 8 and 12 disappeared by 1996.**

Figure 5: Trends in Differences in Average NAEP Mathematics Scores, by Race/Ethnic Group, and Sex, 1990, 1992, and 1996.




*Statistically significant difference between males and females

# SAT Scores

Figures 6 and 7 show differences in scores on the verbal and mathematics sections of the SAT I: Reasoning Test for college-bound seniors in seven racial/ethnic groups over the past 10 years.

### SAT I Verbal

On SAT I Verbal (SAT-V), Blacks are the only group in which females score higher than males, as shown in Figure 6. The slight advantage held by Black males in the early 1990s has disappeared. In fact, since 1994 Black females have been scoring a few points higher than Black males.

Hispanic college-bound seniors show the largest differences in scores: Latin American, South American, Central American, or Other Hispanic; Mexican or Mexican American; and Puerto Rican males score higher than their female peers. This difference has been fairly stable over the past decade. White, American Indian, and Asian/Pacific Islander males generally held an advantage of a few points over their female counterparts throughout the 1990s.

### SAT I Mathematics

On the mathematics part of the SAT I (SAT-M), there is a much wider gap between male and female performance in each racial/ethnic group than is the case with the SAT-V, as shown in Figure 7. With the exception of Black and Latino college-bound seniors, the differences between males and females on the SAT-M in 1999 were between 32 and 38 points. Black males outperformed Black females by 19 points, and Latin American, South American, Central American, or Other Hispanic males outperformed their female counterparts by 55 points (the widest margin of any group). Except for Latin American, South American, Central American, Other Hispanic, and Puerto Rican seniors, the gap between male and female scores narrowed slightly over the decade. For Latin American, South American, Central American, or Other Hispanic seniors, however, the difference between males and females increased from 43 points in 1990 to 55 points in 1999. During that time, the difference for Puerto Rican seniors increased from 32 points to 37 points.

**Notes and sources:**

The SAT Program is a program of the College Board. The SAT I: Reasoning Test, along with the SAT II: Subject Tests, is designed to assess many of the skills that are important to students' success in college.

Data are from The College Board, *College-Bound Seniors National Profile Reports of SAT Program Test Takers for Years 1990 to 1999.*

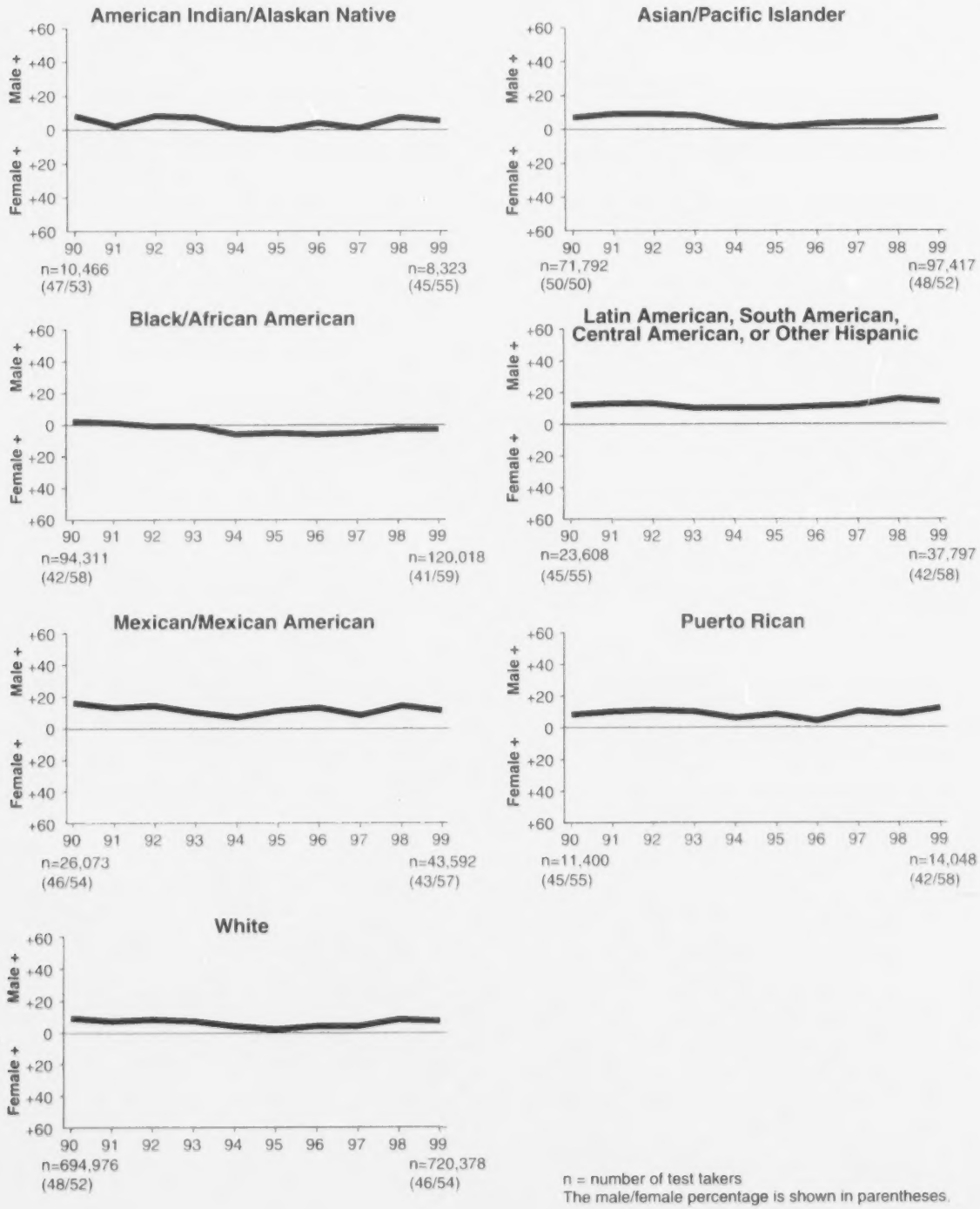
Scores from 1990 to 1995 were converted to the recentered score for comparability.

Figures 6 and 7 show the point difference in average SAT I scores for males and females. The SAT I scale is 200 – 800.

For each of the figures, the number (n) of participants is shown for 1990 and 1999 to provide a sense of population size. The numbers in parentheses show the male/female percentage.

**Blacks are the only group where females scored higher than males on the SAT I Verbal.**

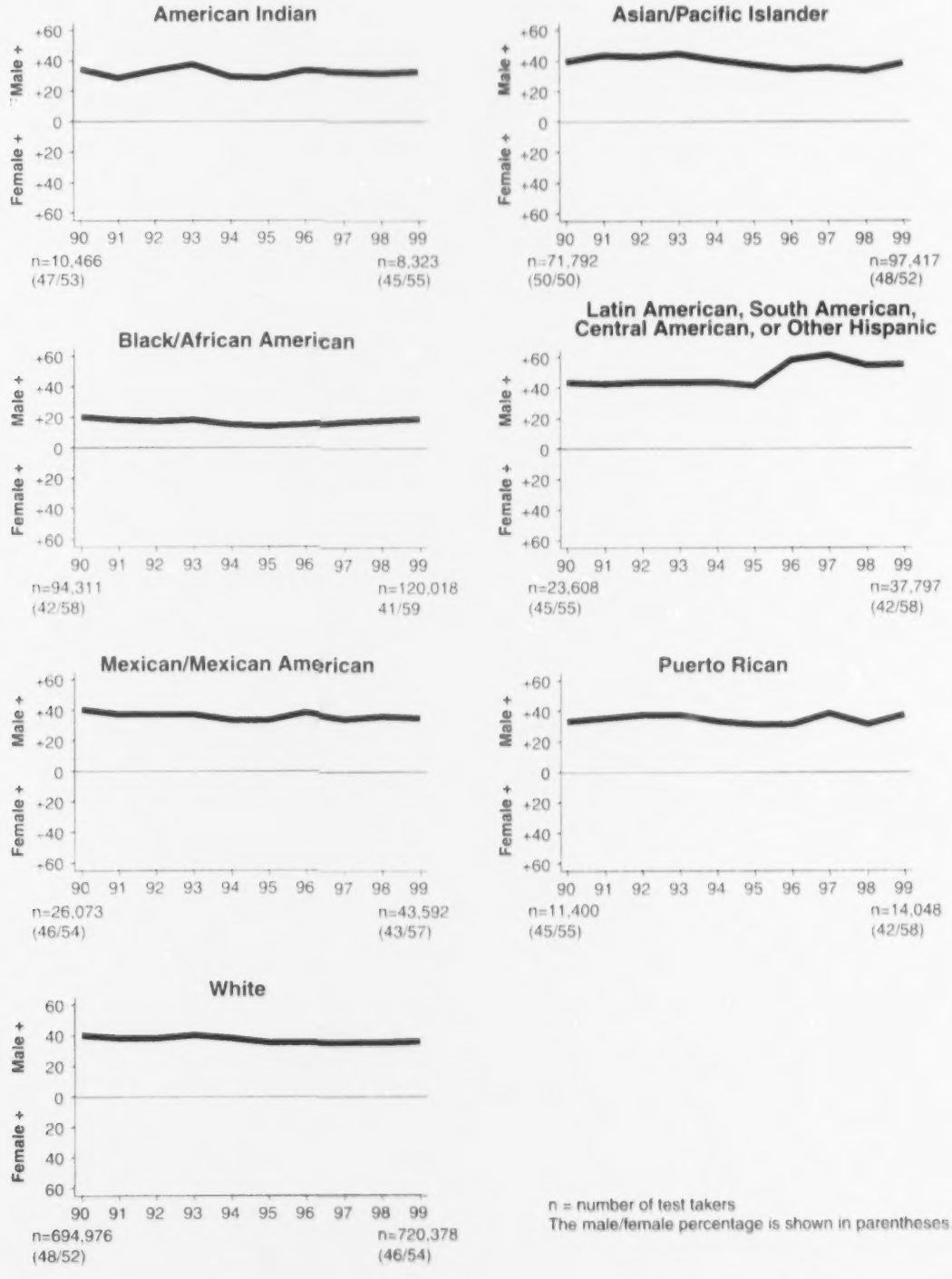
Figure 6: Trends in Differences Between Male and Female SAT I Verbal Scores, by Racial/Ethnic Group and Sex, 1990 – 1999




n = number of test takers
The male/female percentage is shown in parentheses.

**Across all racial/ethnic groups, males scored higher than females on SAT I Mathematics.**

Figure 7: Trends in Differences Between Male and Female SAT I Mathematics Scores, by Racial/Ethnic Group and Sex, 1990 – 1999




n = number of test takers
The male/female percentage is shown in parentheses.

# Graduate Record Examinations

The General Test of the Graduate Record Examinations® (GRE) yields separate scores for verbal, quantitative, and analytic skills related to success at the graduate level of education. Figures 8, 9, and 10 show the differences in the mean scores of male and female U.S. citizens for each of the tests, for each racial/ethnic group, over the past 10 years.

On the Verbal test in 1998, men outperformed women, on average. The greatest differences favoring men were for Other Hispanics (27 points), Whites (24 points), and Mexican Americans (21 points). While Asian/Pacific American men scored 8 points higher than Asian/Pacific American women in 1998, that difference is in contrast with the 16-point difference that favored Asian/Pacific American women 10 years earlier. Similarly, the gap between men and women of other minority groups has narrowed.

On the quantitative measure (GRE-Q), the gap between men and women is larger, especially among Whites, where males scored 70 points higher than females in 1998. The smallest difference was among Blacks, where males scored 43 points higher than females in 1998.

Gender differences on the analytic measure (GRE-A) are smaller than differences on the other two measures, but still favor males. Differences in 1998, favoring males, range from 22 points for Other Hispanic test takers to 8 points for Black test takers.

**Notes and sources:**

The GRE General Test measures verbal, quantitative, and analytical developed abilities that have been acquired over a long period of time. GRE scores can be used by admissions or fellowship panels to supplement undergraduate records and other qualifications for graduate study.

Scores are for U.S. citizens only.

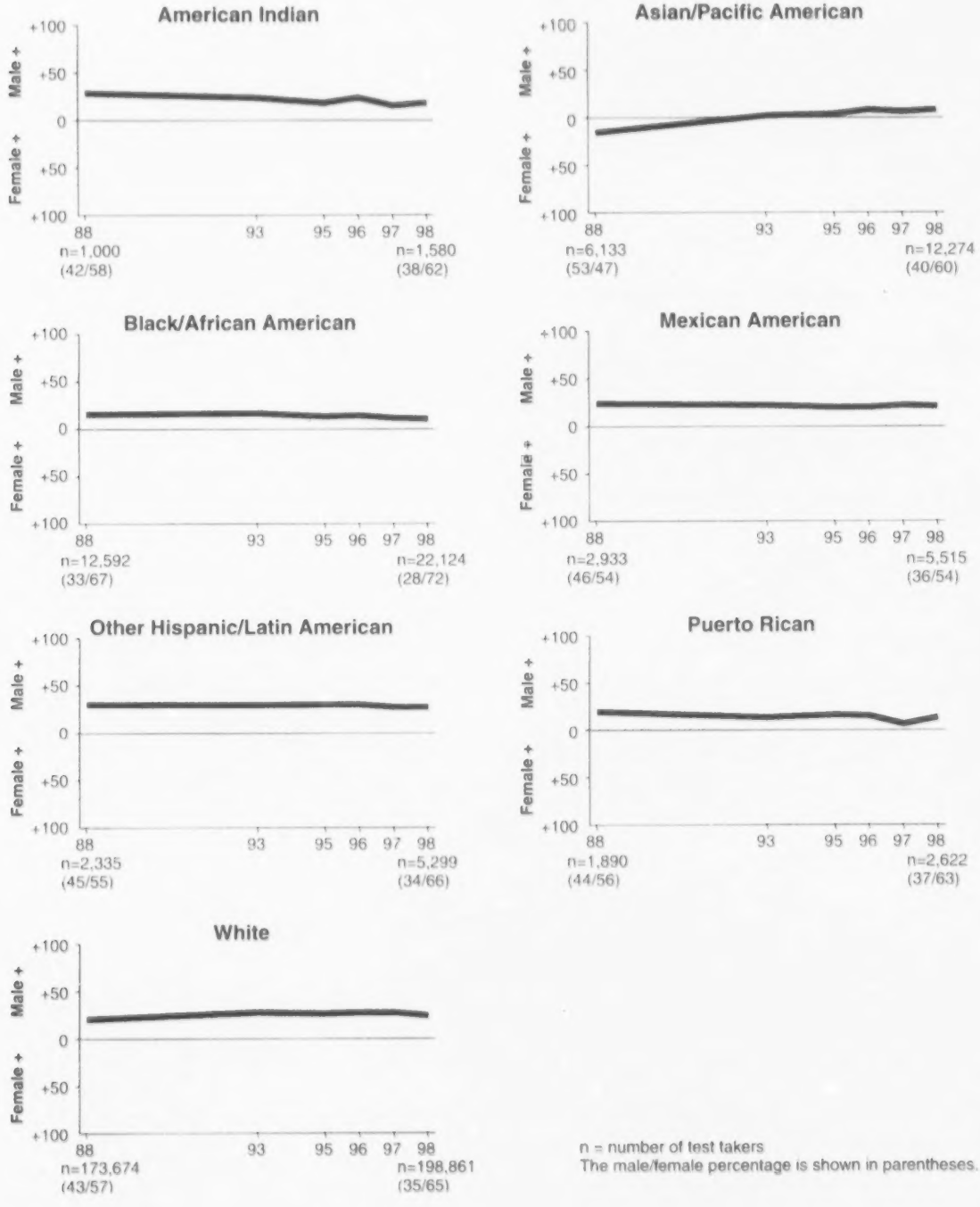
Data are from Educational Testing Service, *Sex, Race, Ethnicity, and Performance on the GRE General Test*, various years.

Figures 8, 9, and 10 show the point difference in average GRE scores for males and females. The GRE scale is 200 – 800.

For each of the figures, the number (n) of participants is shown for 1988 and 1998 to provide a sense of population size. The numbers in parentheses show the male/female percentage.

**In all racial/ethnic groups, males scored higher than females on the GRE Verbal Test.**

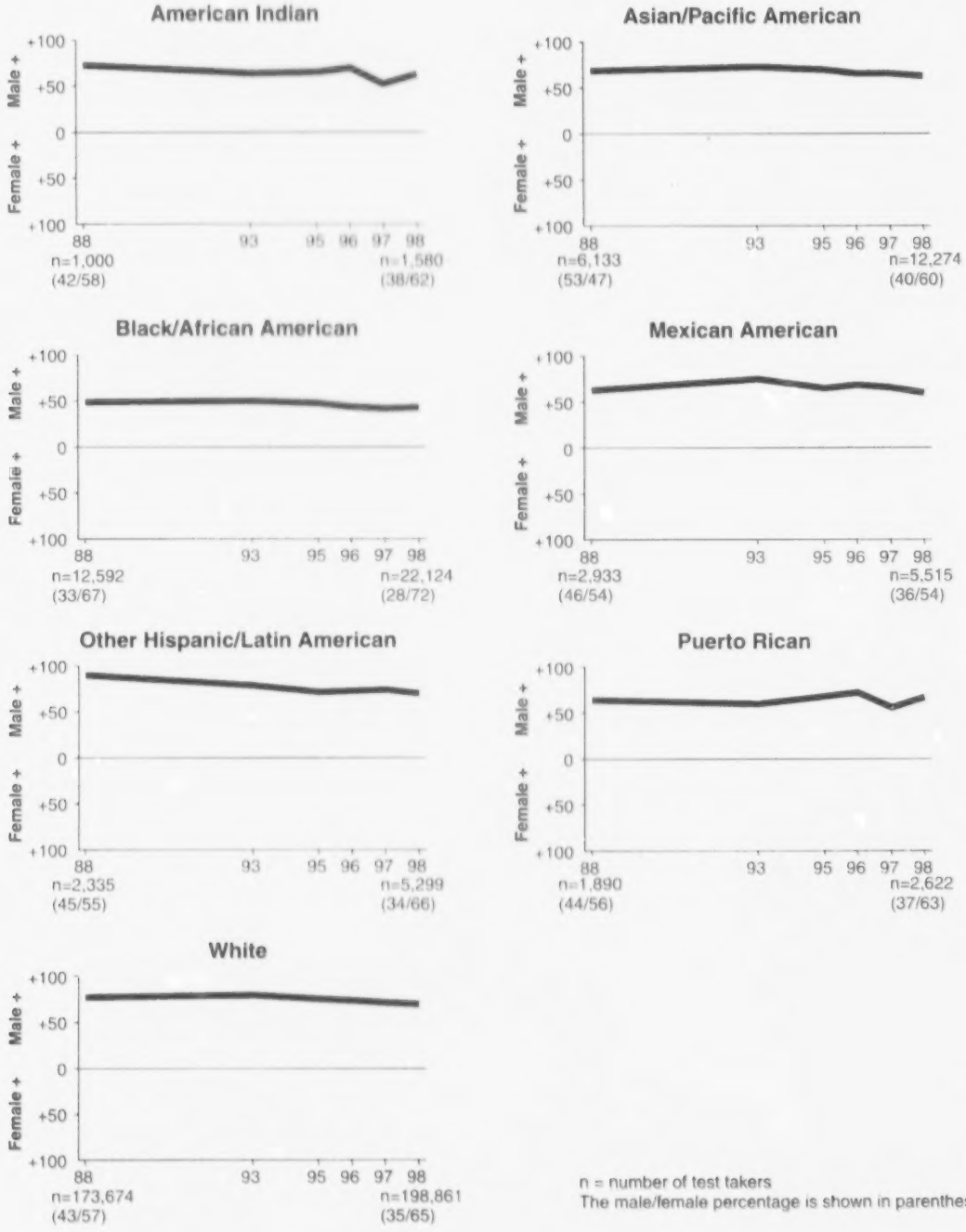
Figure 8: Trends in Differences Between Male and Female GRE Verbal Scores, by Racial/Ethnic Group, 1988 – 1998




n = number of test takers
The male/female percentage is shown in parentheses.

**In all racial/ethnic groups, males scored higher than females on the GRE Quantitative Test.**

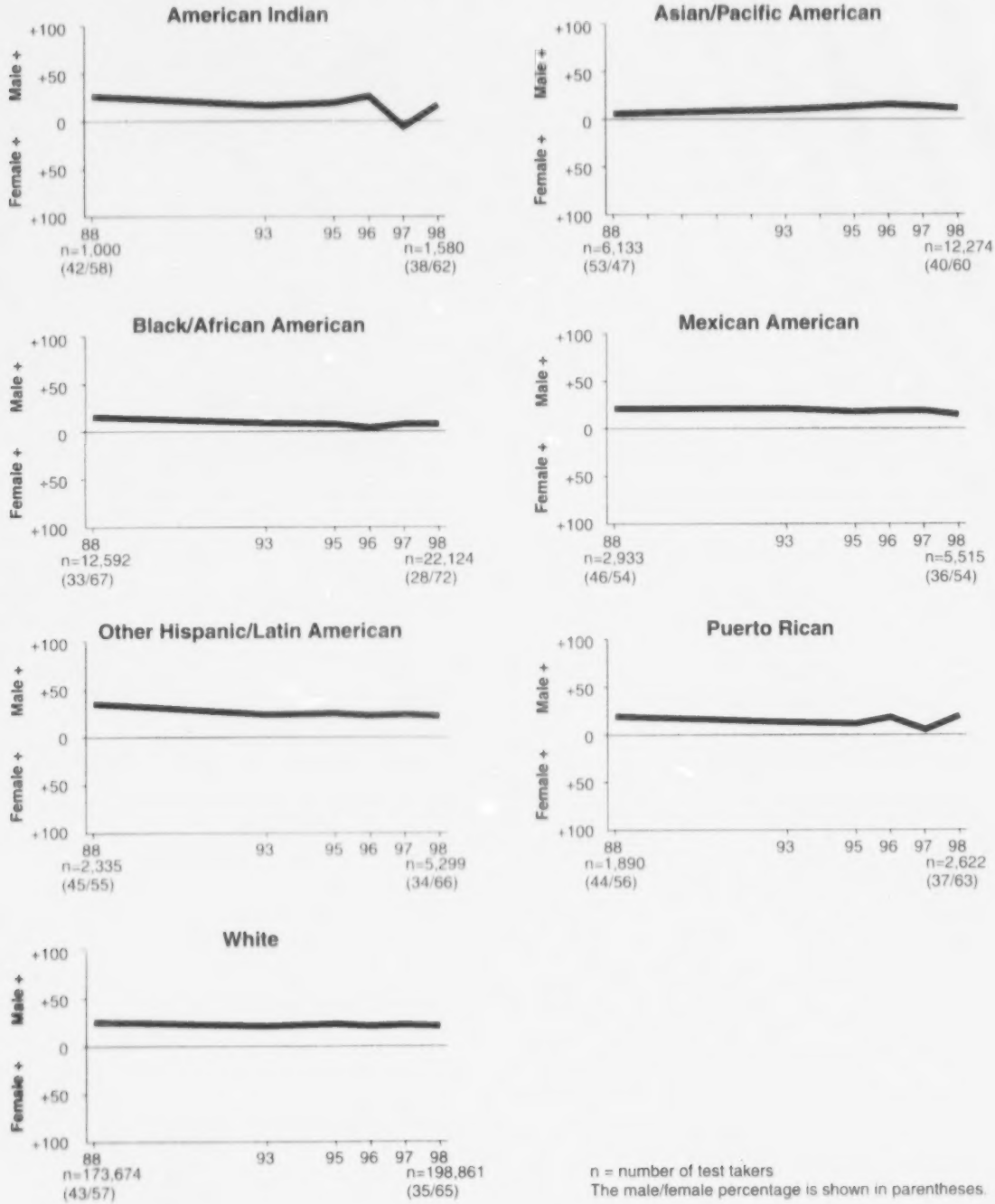
Figure 9: Trends in Differences Between Male and Female GRE Quantitative Scores, by Racial/Ethnic Group, 1988 – 1998




n = number of test takers
The male/female percentage is shown in parentheses.

**Across all racial/ethnic groups, males scored higher than females on the GRE Analytical Test.**

Figure 10: Trends in Differences Between Male and Female GRE Analytical Scores, by Racial/Ethnic Group, 1988 – 1998




n = number of test takers
The male/female percentage is shown in parentheses.

# Graduate Management Admission Test

The Graduate Management Admission Test® (GMAT) is a test of developed abilities intended to provide counselors and admissions officers with one predictor of academic performance in graduate management school.

Figure 11 shows trends in differences between male and female GMAT total scores for each racial/ethnic group. Across all groups, males have higher average scores than females. In 1999, the largest difference (49 points) was for Other Hispanic/Latin American test takers. The smallest differences (34 and 35 points) were for Asian/Asian American and Black test takers, respectively.

Figures 12 and 13 show the score differences between males and females on the Verbal and Quantitative sections of the GMAT. For all racial/ethnic groups, males scored higher, on average, than females, particularly on the Quantitative section.

**Notes and sources:**

GMAT scores are currently used by about 1,700 graduate management programs throughout the world, and about 1,000 of these programs require GMAT scores from each applicant. The test is currently delivered as a computer-based test with four timed sections: Analytical Writing (two sections), Quantitative, and Verbal (both Quantitative and Verbal are computer-adaptive multiple-choice). Prior to October 1997, the GMAT was a paper-based test with six operational multiple-choice sections (three verbal and three quantitative) and, beginning in October 1994, two Analytical Writing sections. The test yields four scores—Verbal, Quantitative, Total, and Analytical Writing. The Analytical Writing measure does not contribute to the other scores. Beginning in the 1997–98 testing year, the GMAT was offered exclusively as a computer-based test in all but a few countries. For the past two years, 97 and 99 percent, respectively, were computer-based.

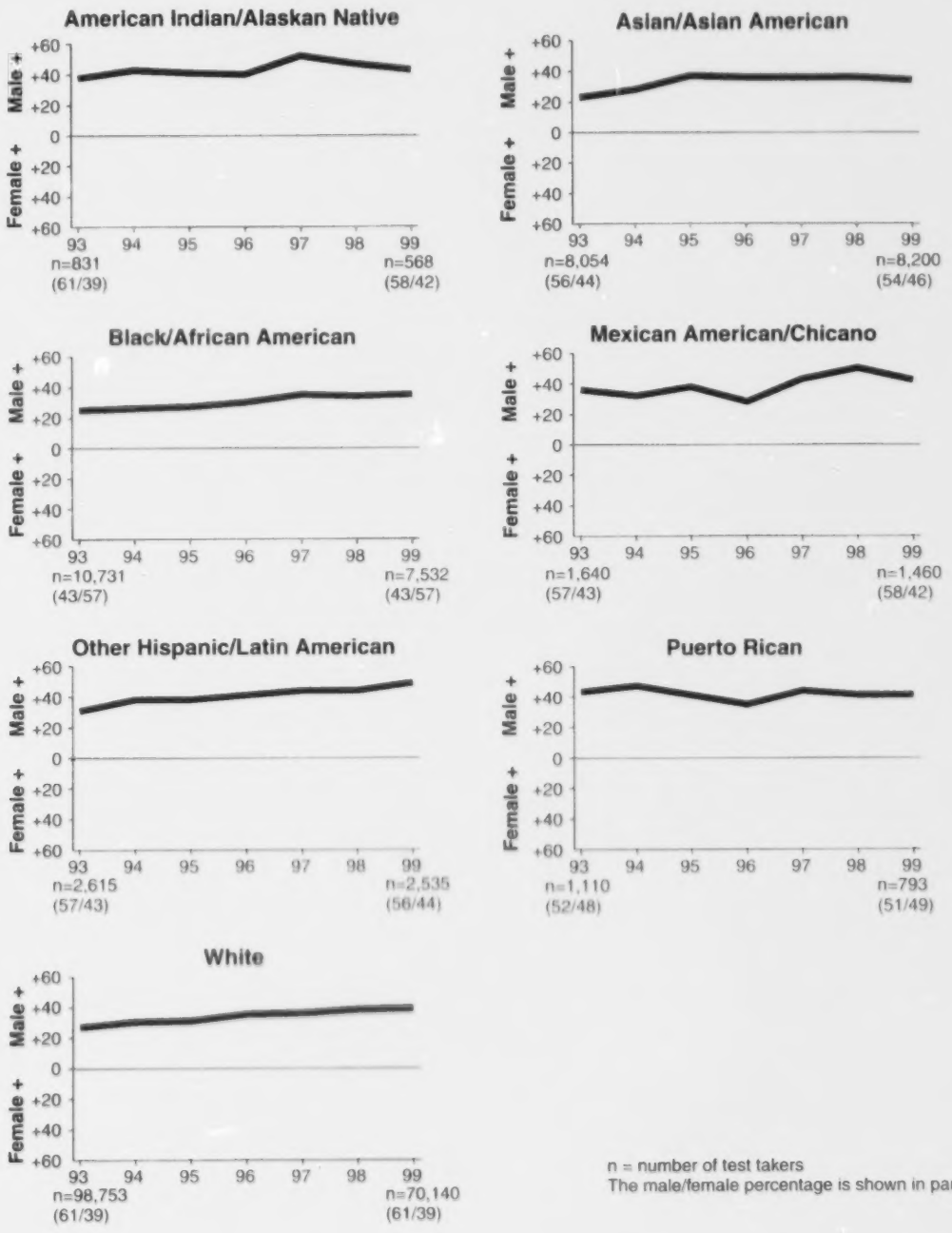
Data are from *GMAT 5-Year Profiles*, 1992–97 and 1994–99, Graduate Management Admissions Council, and *GMAT Demographic Analysis*, various years.

Figures 11, 12, and 13 show the point difference in average GMAT scores for males and females for the Total, Verbal, and Quantitative sections of the test. The Verbal and Quantitative score scales range from 0 to 60, and the Total score ranges from 200 to 800.

For each of the figures, the number (n) of participants is shown for 1993 and 1999 to provide a sense of population size. The numbers in parentheses show the male/female percentage.

**Across all racial/ethnic groups, males had higher GMAT Total scores than females.**

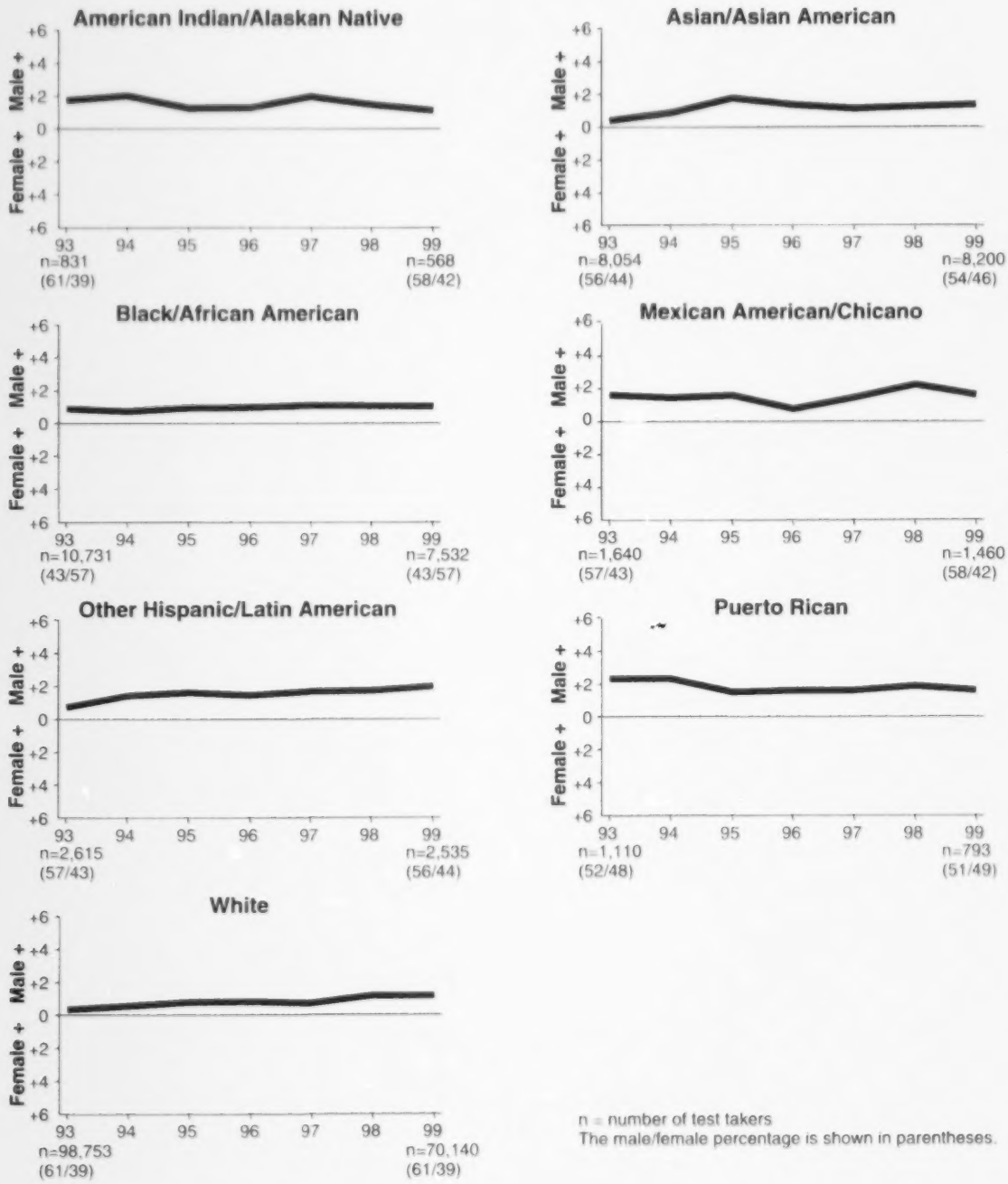
Figure 11: Trends in Differences Between Male and Female GMAT Total Scores Means, by Race/Ethnicity, 1993 – 1999




n = number of test takers
The male/female percentage is shown in parentheses.

**On GMAT Verbal test, males in all racial/ethnic groups scored a few points higher than females.**

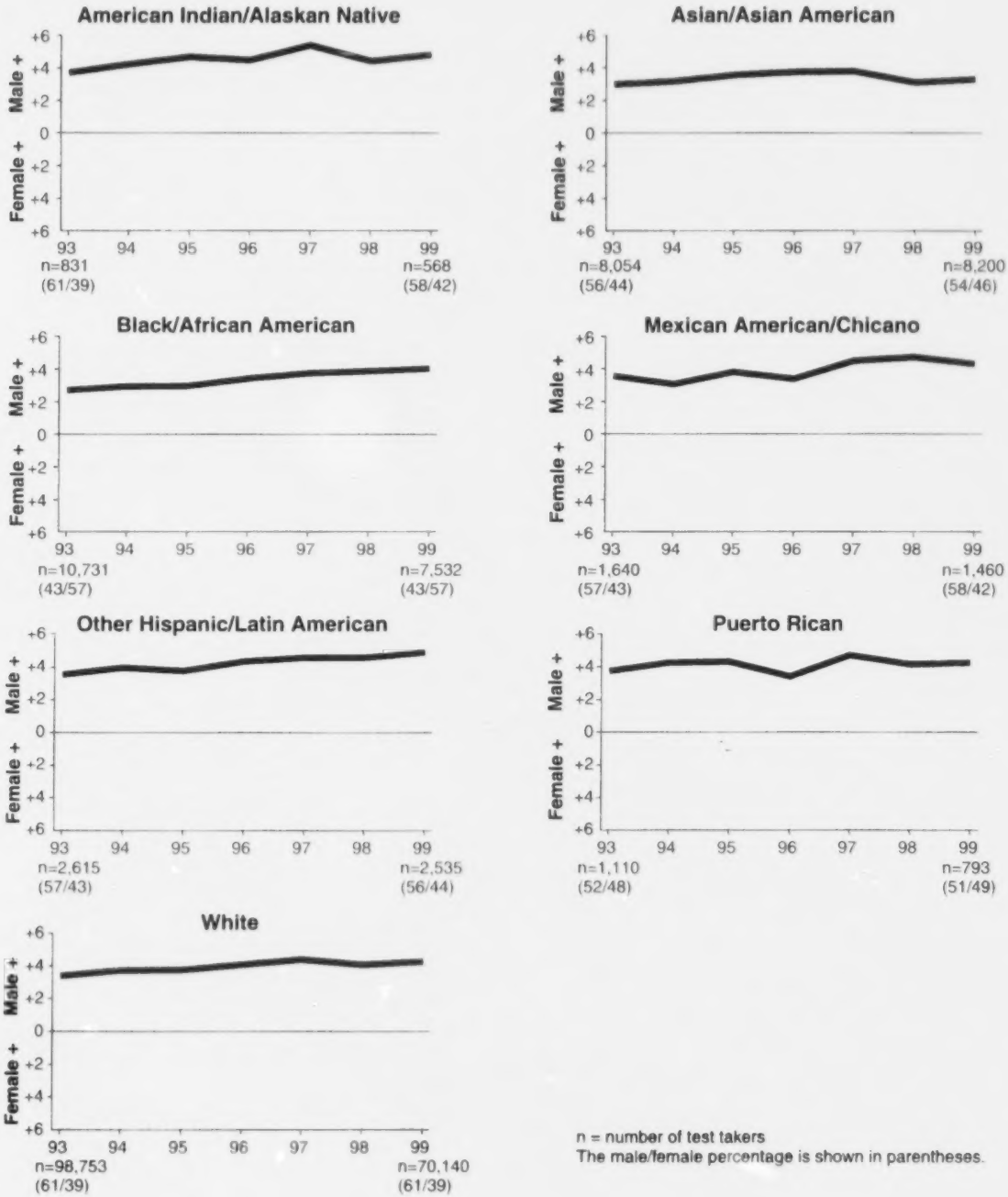
Figure 12: Trends in Differences Between Male and Female GMAT Verbal Scores Means, by Race/Ethnicity, 1993 – 1999




n = number of test takers
The male/female percentage is shown in parentheses.

**On GMAT Quantitative test, males in all racial/ethnic groups scored higher than females.**

Figure 13: Trends in Differences Between Male and Female GMAT Quantitative Scores Means, by Race/Ethnicity, 1993 – 1999




n = number of test takers
The male/female percentage is shown in parentheses.

# High School Course Taking

College-bound seniors who take the SAT I: Reasoning Test are asked to describe their high school course taking in six academic subjects. This section describes differences in course-taking patterns between males and females over the past 10 years. It includes a measure of overall quantity of academic course work and measures of course taking in mathematics and science. Each chart shows the difference between males and females.

Figure 14 compares the percentage of college-bound seniors who took a total of 20 or more years of courses in six core academic subjects (a measure of overall course-taking quantity) during their high school years. Across all racial/ethnic groups, a larger percentage of females than males accumulated this much course work. In 1999, 55 percent of college-bound senior females took 20 or more years of course work in six academic subjects, compared to 46 percent of the males. The difference was largest among White, American Indian, and Asian/Pacific Islander students. The gender difference among Hispanic and Black students was smaller.

Figure 15 compares the percentage of college-bound seniors who took four or more years of mathematics. The lines are trending downward toward zero, indicating that, over the decade, females have been closing the gap in mathematics. In 1999, White, Black, and Asian/Pacific Islander females pulled even with their male counterparts. A gap of 3 to 4 points still exists, however, between Hispanic males and females.

Figure 16 compares the percentage of college-bound seniors who took four or more years of natural sciences. The pattern is similar to math, with females showing significant progress over the decade. American Indian, Asian/Pacific Islander, Black, and Mexican/Mexican American females have pulled even with males; gaps of 4 and 3 points still exist, however, between Puerto Rican and Latino male and female students, respectively.

Data from the ACT program, the other major college admissions test, show a similar pattern. In 1999, the female advantage in taking a "core curriculum" was between 1 and 3 percentage points for all racial/ethnic groups except Blacks. Black females held a 7 percentage point advantage in that year.

**Notes and sources:**

Data are from The College Board, *College-Bound Seniors National Profile Reports of SAT Program Test Takers for Years 1990 to 1999.*

College-bound seniors who take the SAT represent the majority of students who attend four-year colleges.

Six academic subjects include English, mathematics, natural sciences, social sciences and history, foreign and classical languages, and art and music.

Natural sciences include biology, chemistry, geology/earth/space science, physics, and other sciences.

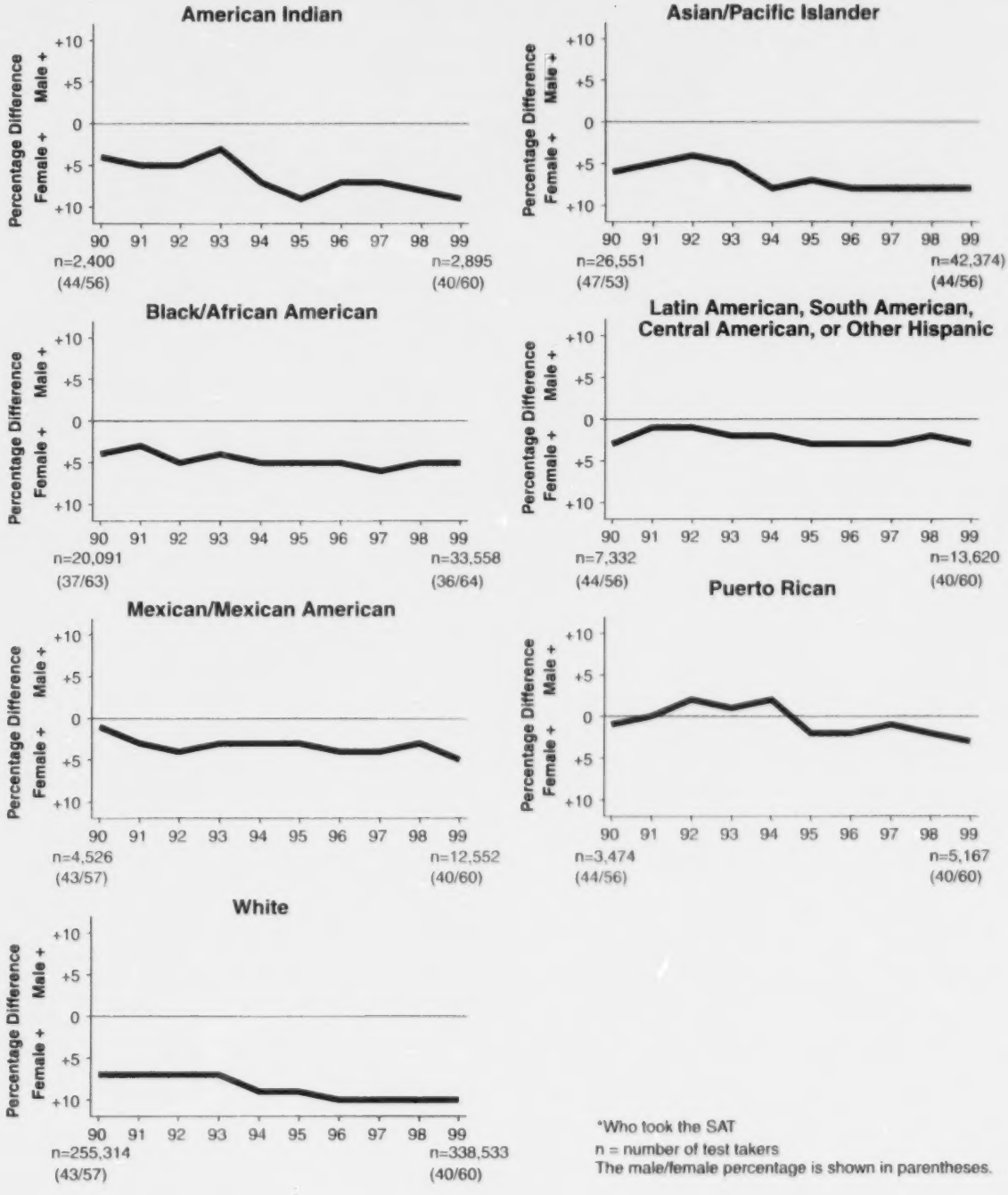
Mathematics includes algebra, geometry, trigonometry, pre-calculus, calculus, computer mathematics, and other mathematics.

ACT, Inc., a college admissions program, defines "core curriculum" as four years of English and three years each of mathematics, natural sciences, and social sciences. These data were provided by Thomas G. Mortenson, *Postsecondary Education OPPORTUNITY.*

Figures 14, 15, and 16 show the difference between the percentage of males and females who reported course work. For each of the figures, the number (n) of participants is shown for 1990 and 1999 to provide a sense of population size. The numbers in parentheses show the male/female percentage.

**Across all racial/ethnic groups, girls were more likely than boys to accumulate 20 years or more of academic course work in high school. The difference was largest for White, American Indian, and Asian/Pacific Island seniors.**

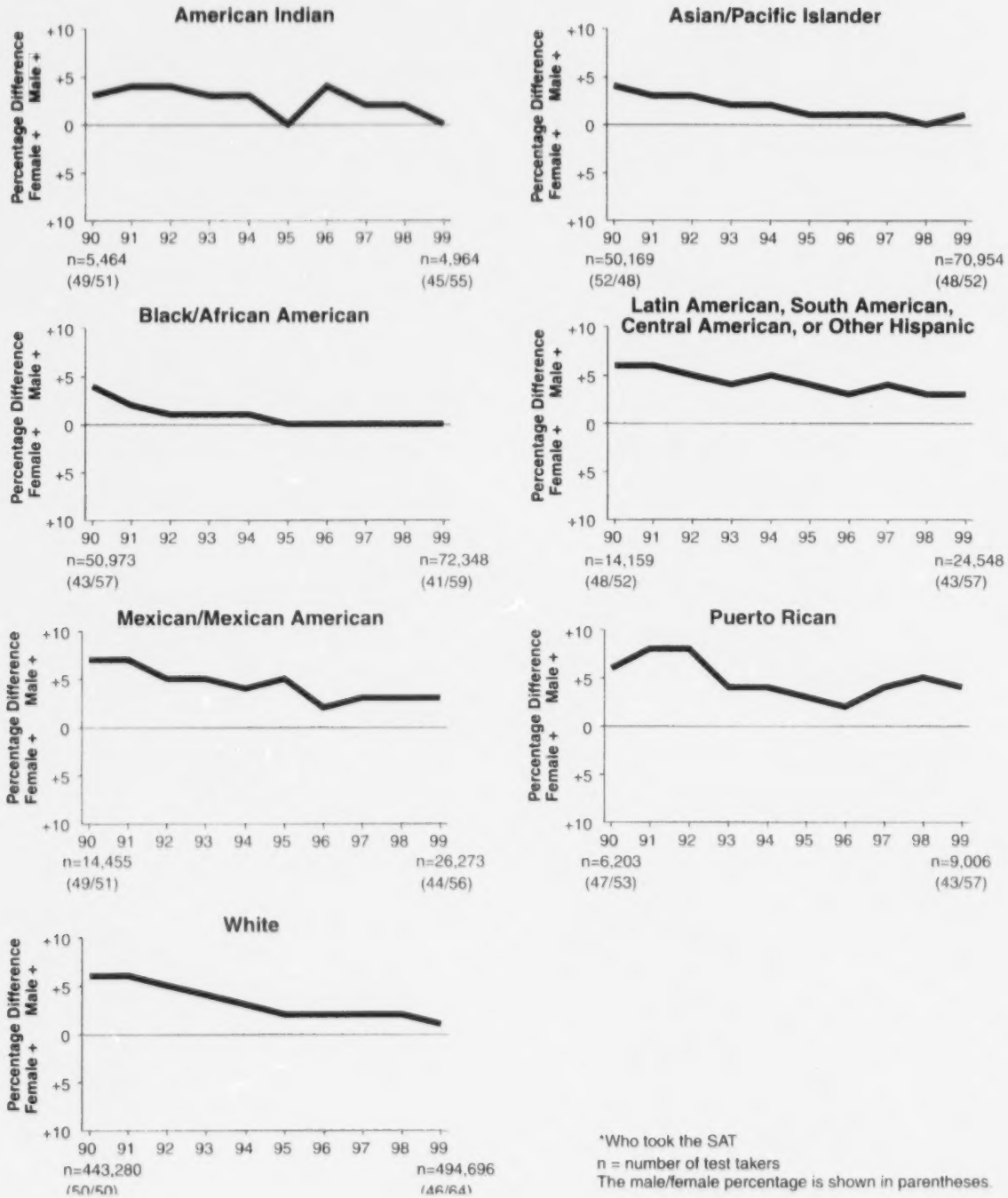
Figure 14: Trends in Differences Between Male and Female College-Bound Seniors* in the Percentage Taking 20 or More Years in Six Academic Subjects, by Racial/Ethnic Group, 1990 – 1999




*Who took the SAT
n = number of test takers
The male/female percentage is shown in parentheses.

**Across all racial/ethnic groups, girls are catching up with boys in taking four years of math. In 1999, White, Black, and Asian/Pacific Islander girls pulled even with boys.**

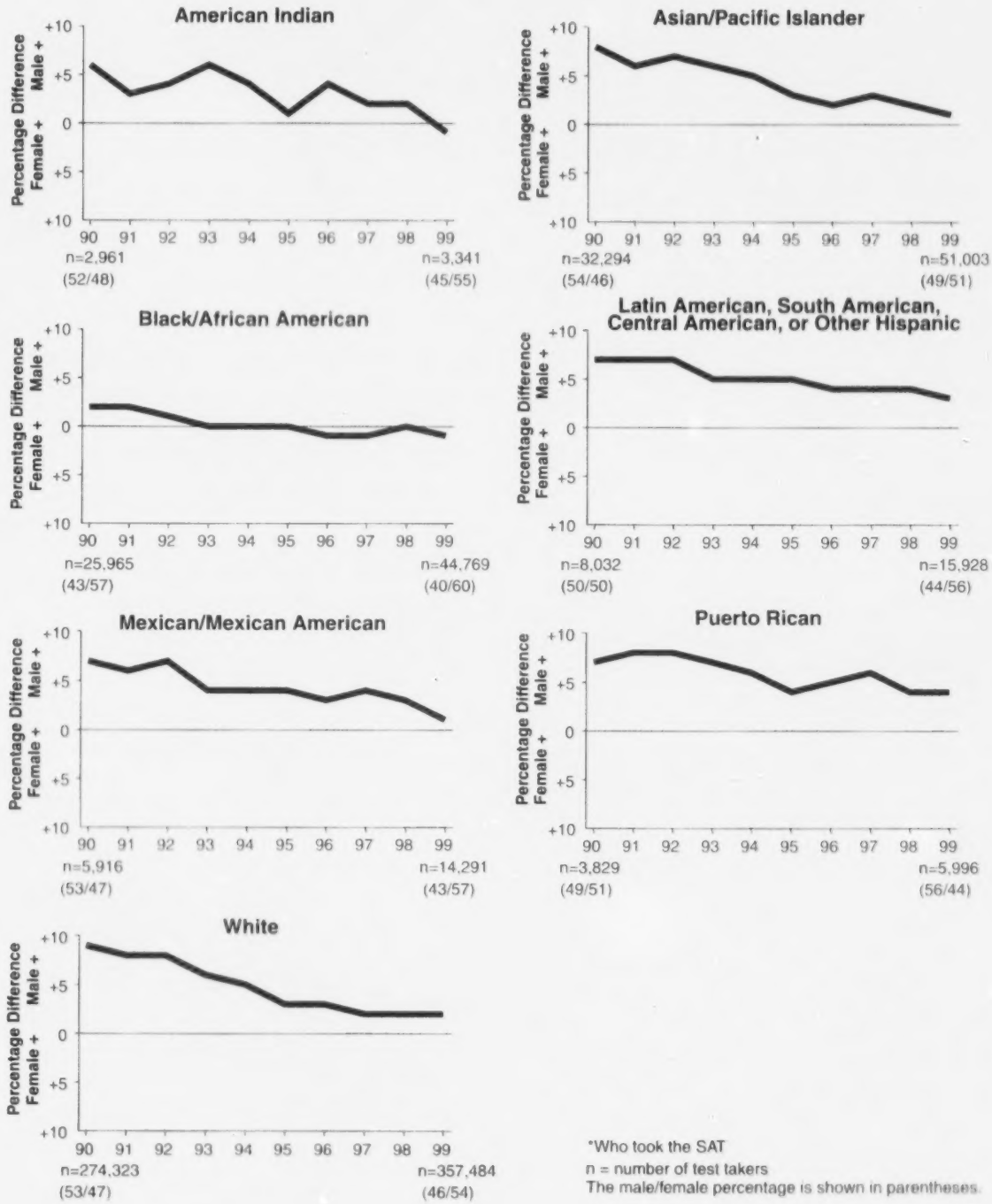
Figure 15: Trends in Differences Between Male and Female College-Bound Seniors* in the Percentage Taking Four or More Years of Mathematics, by Racial/Ethnic Group, 1990 – 1999




*Who took the SAT
n = number of test takers
The male/female percentage is shown in parentheses.

**In all racial/ethnic groups, females have made significant progress over the decade in taking four years of science in high school.**

Figure 16: Trends in Differences Between Male and Female College-Bound Seniors* in the Percentage Taking Four Years or More of Science, by Racial/Ethnic Group, 1990 – 1999




*Who took the SAT

n = number of test takers

The male/female percentage is shown in parentheses.

# Advanced Placement

The Advanced Placement Program® (AP) is a cooperative education endeavor based on the premise that college-level material can be taught successfully to able and well-prepared high school students. Participating colleges, in turn, grant credit, appropriate placement, or both to students who do well on the AP Examinations.

In 1999, more than 700,000 students took AP course work at nearly 22,000 U.S. high schools. This program has grown dramatically over the past several decades, and is increasingly supported by state and federal resources and policies that encourage participation in the program. Across all racial/ethnic groups, participation in AP has increased over the past decade. Increases range from a high of 308 percent for Chicano/Mexican American females to a low of 79 percent for White males. In all cases, the increases greatly exceed the U.S. population changes for the groups as a whole over the decade.

*Participation.* At least in aggregate terms, participation in AP Examinations is increasingly becoming more female. In 1999, 56 percent of AP candidates (test takers) were female, up from 52 percent 10 years earlier. Of course, this percentage varies greatly across different subject areas.

In 1999:

- Males represented 90 percent of Computer Science AB candidates and 78 percent of Physics C: Electricity and Magnetism candidates.

- Females, on the other hand, represented 70 percent of the French Language candidates, 67 percent of the Psychology candidates, and 64 percent of the Art History candidates.

Figure 17 shows the trends in AP Examinations by racial/ethnic group and sex. Because data are not available that would show the percentage of each racial/ethnic group that participates in AP, Figure 17 shows the ratio of male to female AP candidates for the period between 1990 and 1999. A ratio of 1 means that an equal number of males and females participated. Ratios larger than 1 indicate a higher proportion of male participation; ratios less than 1 indicate a lower proportion of male participation.

Two trends are clear. First, for all racial/ethnic groups, more females than males took AP Examinations (the male to female ratios for all years are below 1). The second apparent trend is the widening of the gap between males and females. For all racial/ethnic groups, the difference between males and females at the end of the decade was wider than the

gap at the beginning of the decade. That is, the representation for females is increasing. It is worth repeating, however, that these trends vary by subject.

In 1999, the ratio of males to females who took an AP Examination was lowest for Black high school students (.51). Among the Hispanic groups, the ratio was somewhat higher: between .63 for Chicano/Mexican American high school students and .68 for Puerto Rican students. Ratios for Whites and American Indians were higher at .84 and .79, respectively.

*AP Achievement.* To present a reasonable sample of subject-matter content in the high school curriculum, results are presented here for three AP Examinations—English Literature and Composition, Biology, and Calculus AB. Trends in the differences in the percentages of males and females who scored a "3" or higher on these Examinations are shown in Figures 18, 19, and 20. The AP grading scale should be interpreted as follows: 5 = extremely qualified, 4 = well qualified, 3 = qualified, 2 = possibly qualified, and 1 = no recommendation. Thus, students scoring "3" or higher are considered by many colleges to have done well enough on the Examinations to be given college credit.

Figure 18 shows that in English Literature and Composition in 1999, there were only small differences, on average, in the percentages of males and females who earned scores of "3" or more. Figure 19 compares male and female performance on the Biology Examination. Across all racial/ethnic groups, males were more likely than females to score high. Hispanic males showed the largest differences. Finally, Figure 20 compares Calculus AB Examination scores. As with Biology, males in each racial/ethnic group were more likely than females to earn scores of "3" or higher. In 1999, the largest differences favored Puerto Rican and Other Hispanic males.

**Notes and sources:**

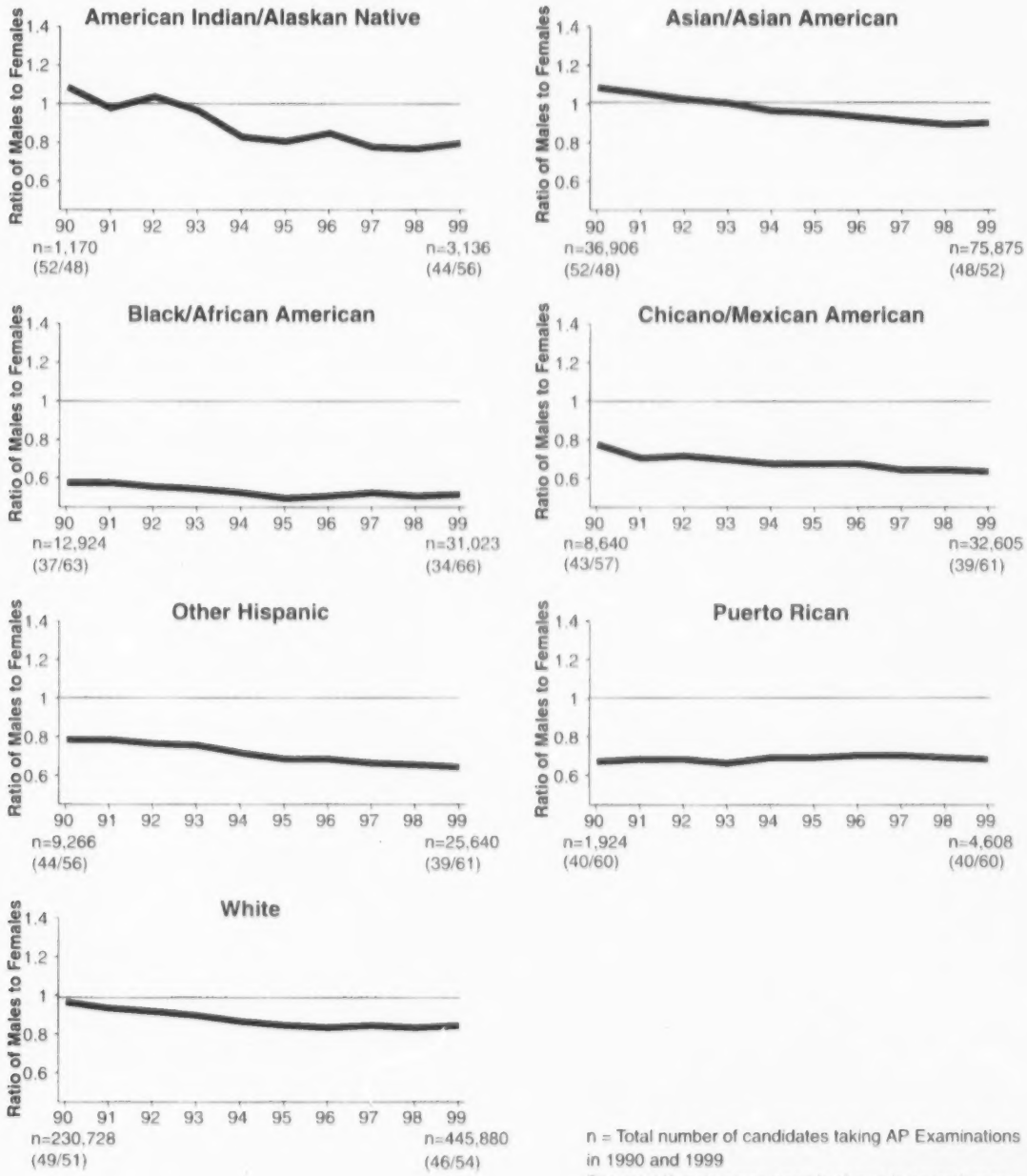
Data are from *Advanced Placement Program National Summary Reports*, The College Board, 1990 through 1999.

Figure 17 shows the ratio of male to female AP candidates (the number of males divided by the number of females). Figures 18, 19, and 20 show trends in the percentage differences of males and females who score "3" or higher on each Examination (percentage of males scoring "3" or higher compared to the percentage of females scoring "3" or higher).

For each of the figures, the number (n) of participants is shown for 1990 and 1999 to provide a sense of population size. The numbers in parentheses show the male/female percentage.

**Across all racial/ethnic groups, more females participated in Advanced Placement.**

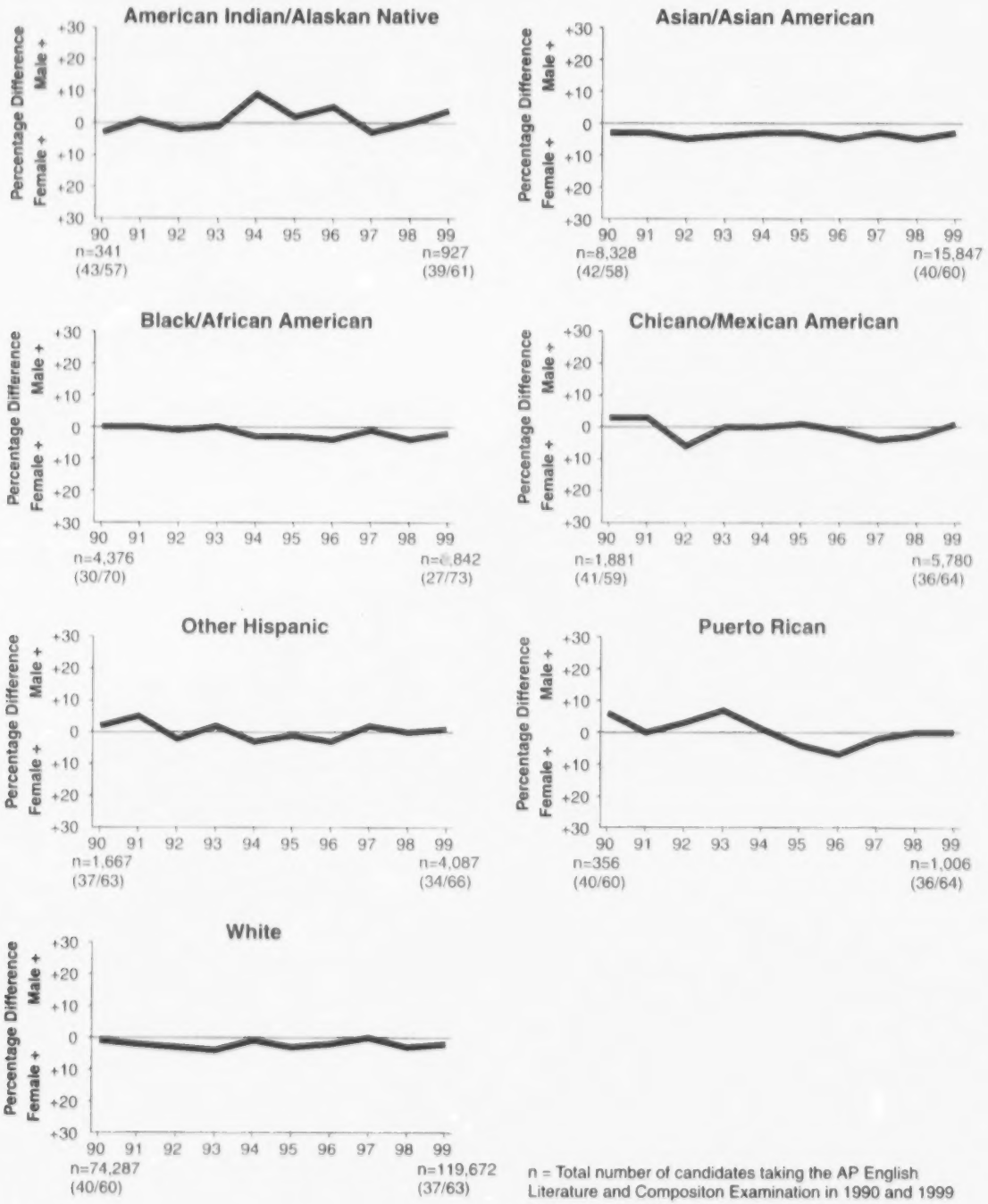
Figure 17: Trends in Differences Between Male and Female Advanced Placement Candidates, 1990 – 1999




n = Total number of candidates taking AP Examinations in 1990 and 1999
The male/female percentage is shown in parentheses.

**There was little difference between male and female high school students in the percent scoring high on the AP English Literature and Composition Exam.**

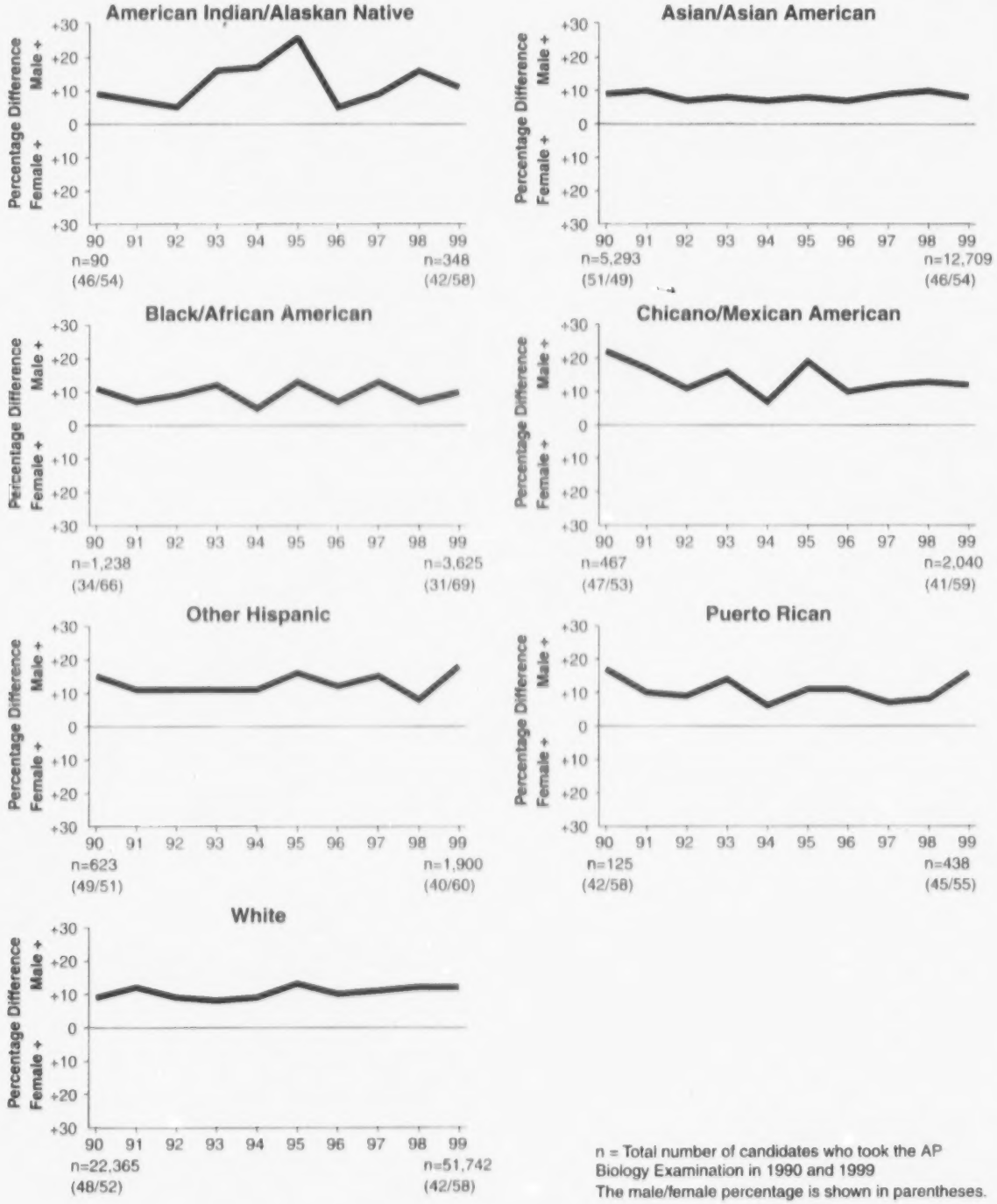
Figure 18: Trends in Differences Between Males and Females Scoring "3" or Higher on AP English Literature and Composition, 1990 – 1999




n = Total number of candidates taking the AP English Literature and Compositon Examination in 1990 and 1999
The male/female percentage is shown in parentheses.

**Across all racial/ethnic groups, males were more likely than females to score high on the AP Biology Examination.**

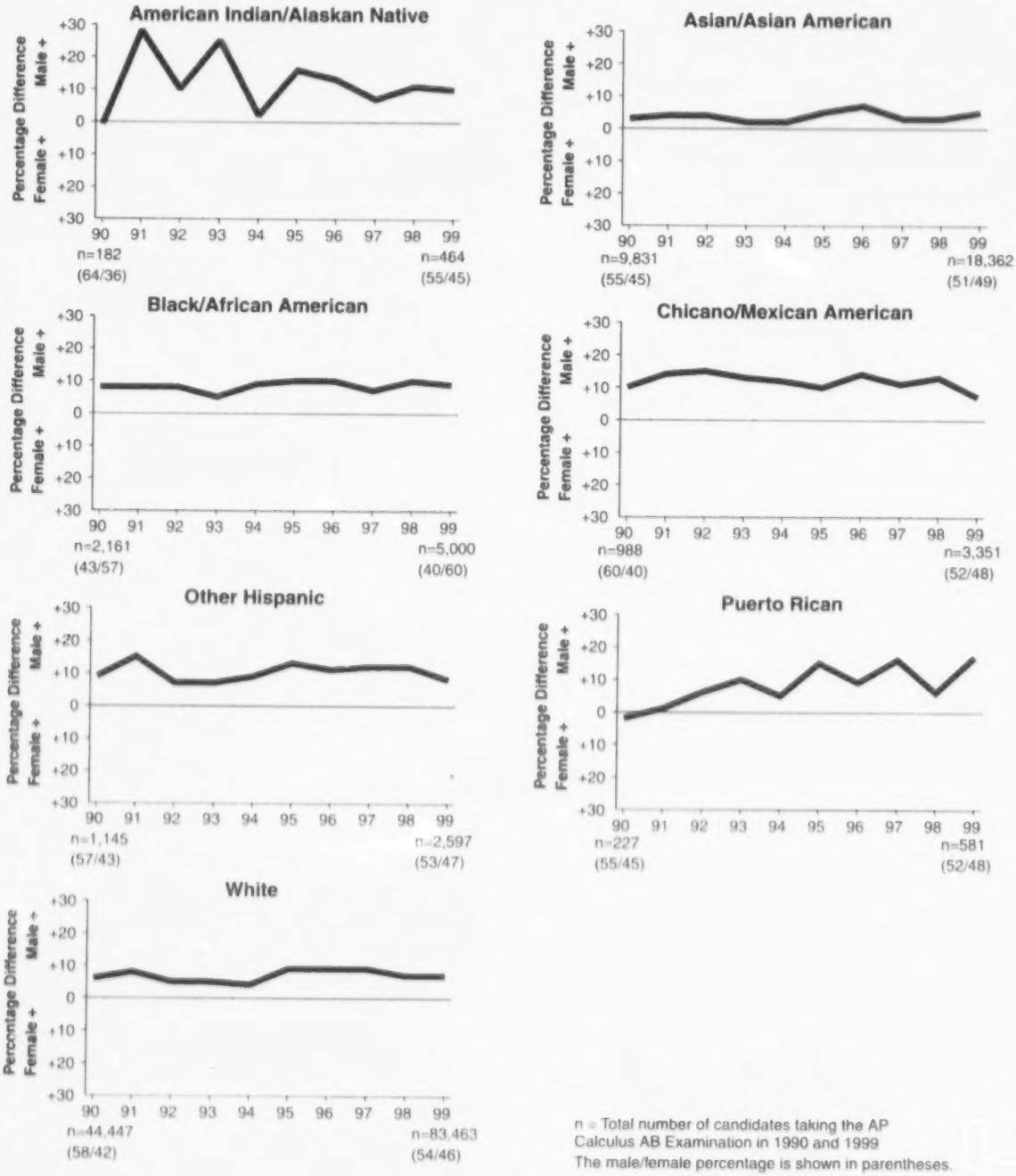
Figure 19: Trends in Differences Between Males and Females Scoring "3" or Higher on AP Biology, 1990 – 1999




n = Total number of candidates who took the AP Biology Examination in 1990 and 1999
The male/female percentage is shown in parentheses.

**Across all racial/ethnic groups, males were more likely than females to score high on the AP Calculus AB Examination.**

Figure 20: Trends in Differences Between Males and Females Scoring "3" or Higher on AP Calculus AB, 1990 – 1999




n = Total number of candidates taking the AP Calculus AB Examination in 1990 and 1999
The male/female percentage is shown in parentheses.

# Educational Attainment

### *High School*

Today, a high school diploma is the minimum qualification for most jobs in the post-industrial workforce. In 1998, 88 percent of adults between the ages of 25 and 29 had completed four years of high school or more. In 1940, only 38 percent of American adults in that age group had this much education, increasing to about 75 percent by the end of the 1960s, and to about 85 percent by the end of the 1970s.

By 1998, the percentage of females between the ages of 25 and 29 completing four years of high school or more was about 90 percent, compared to about 87 percent of males.

As seen in Figure 21, when we look at differences between males and females within racial/ethnic groups, the general pattern favors females. For White adults between the ages of 25 and 29, the advantage held by males disappeared around the early 1980s. Since then, more White females than White males completed four years of high school or more. In 1998, 90 percent of White females, compared to 86 percent of White males, completed high school or more, a difference of 4 percentage points.

For Black adults, the lines cross each other frequently, sometimes favoring males, sometimes favoring females, with little consistent pattern (due, at least in part, to small sample sizes). In 1998, there was no difference in educational attainment between Black males and Black females—88 percent had completed high school or more.

For Hispanic adults, the pattern seems to favor females, at least from the early 1980s on. In 1998, 66 percent of Hispanic females in this age group had completed four years of high school or more, compared to only 60 percent of Hispanic males, a difference of 6 percentage points.

### *College*

While a high school education is required for basic employability today, at least some college education is required for the better jobs, and employers often favor individuals with college degrees, even when a degree may be unnecessary for the job.

In 1998, 27 percent of adults between the ages of 25 and 29 had completed four years of college or more, up from about 6 percent in 1940 and 21 percent in 1974. The largest growth in college attendance has been among females. While the percentage of males completing four years of college or more increased by only about 2 percentage points over the past 25 years, the jump for females was almost 12 percentage points. Currently, 26 percent of males and 29 percent of females between the ages of 25 and 29 completed four years of college or more.

Figure 22 shows the difference in college completion rates for males and females for each racial/ethnic group. For both sexes, White adults were more likely to have completed four years of college or more (28 percent) than Black (16 percent) and Hispanic (10 percent) adults.

Between 1974 and 1998, for White, Black, and Hispanic adults, the male advantage in educational attainment has been erased. The advantage in college completion held by males in 1974 had switched over to females by the early 1990s for all racial/ethnic groups. In 1998, Black females held a 3 percentage point advantage, Hispanic females an advantage of 2 percentage points, and White females an advantage of 4 percentage points.

**Notes and Sources:**

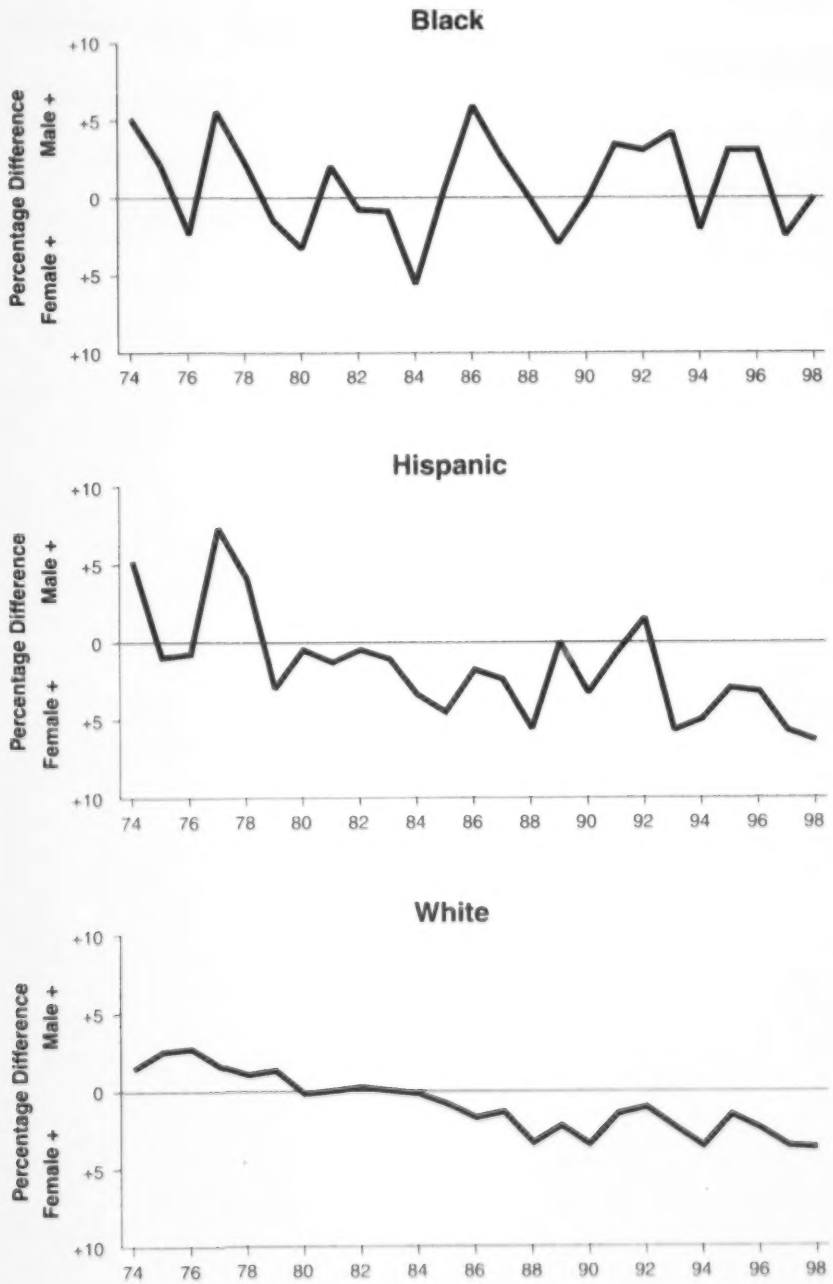
Data are from U.S. Bureau of the Census, Current Population Survey. Table A-2. *Percent of People 25 Years Old and Over Who Have Completed High School or College, by Race, Hispanic Origin and Sex: Selected Years 1940 to 1998*, December 10, 1998.

Figures 21 and 22 show the difference in the percentage of men and women at each educational level. The jagged lines for Blacks and Hispanics are due to smaller sample sizes.

People of Hispanic origin may be of any race.

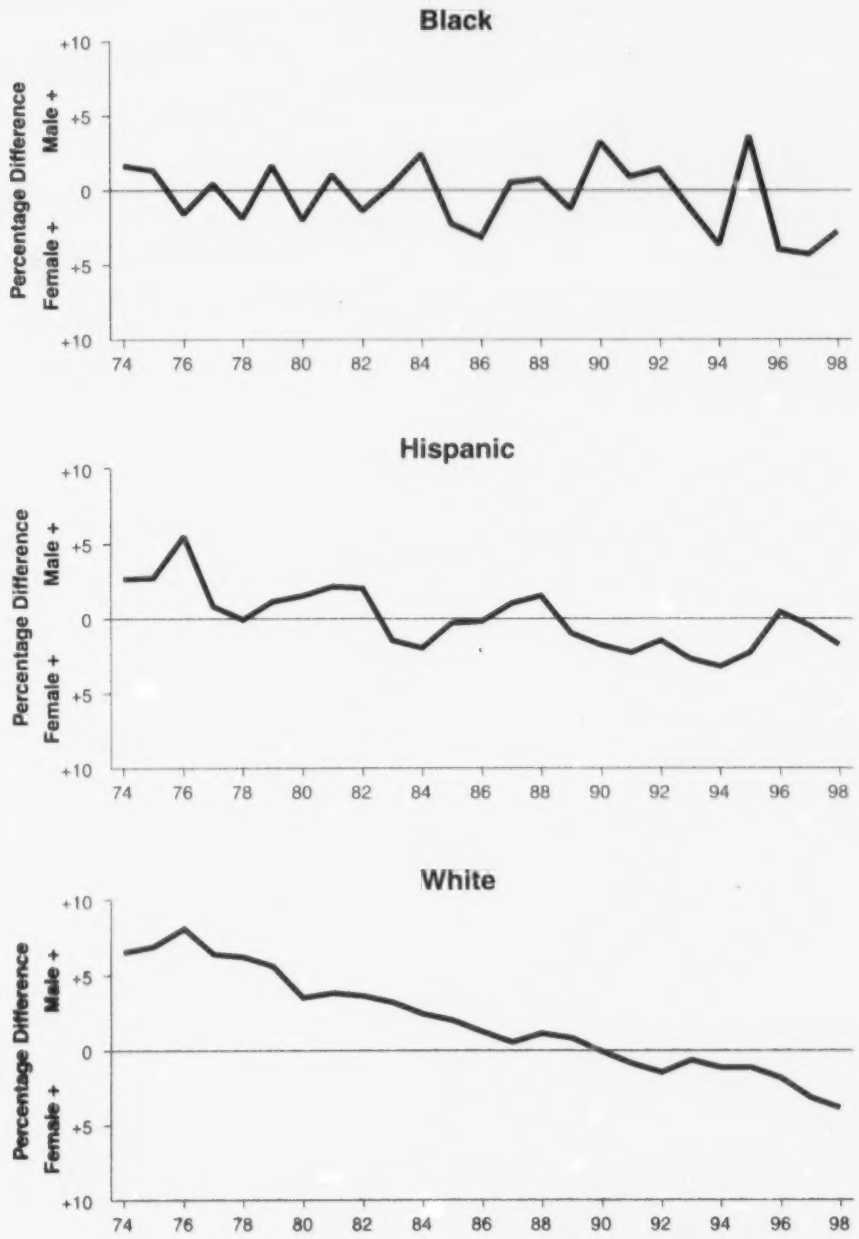
**For White and Hispanic 25- to 29-year-olds,**
**females passed males in the percentage completing high school or more.**
**For Blacks, there was no gender gap and no trend.**

Figure 21: Trends in Differences Between Male and Female 25- to 29-Year-Olds in the Percentage Completing Four Years of High School or More, by Racial/Ethnic Group, 1974 – 1998



**The advantage held by males in college completion during the early 1970s ended by the early 1990s for all racial/ethnic groups. By 1998, White, Black, and Hispanic females held an advantage of between two and four percentage points.**

Figure 22: Trends in Differences Between Male and Female 25- to 29-Year-Olds in the Percentage Completing Four Years of College or More, by Racial/Ethnic Group, 1974 –1998



# Earnings and Education

### *High School Graduates*

Figure 23 shows trends in the ratio of male to female annual earnings for White, Black, and Hispanic high school graduates since 1975. On average, White high school graduates earned more than Black and Hispanic high school graduates, who earned about the same. Within all racial/ethnic groups, males earned more than females.

The largest difference between males and females was for White high school graduates, where the ratio of male to female income was 1.7 to 1 in 1997 ($29,298 for males versus $17,166 for females). This has declined from a ratio of 2.2 to 1 in 1975.

The advantage for Black and Hispanic male high school graduates was about 1.4 to 1 in 1997 ($22,440 for Black males versus $15,789 for Black females, and $22,253 for Hispanic males versus $15,747 for Hispanic females). In 1975, the advantage was 1.6 to 1 for Black males and 1.8 to 1 for Hispanic males.

In terms of earnings growth since 1975, women high school graduates outpaced men in all groups, led by White females, whose income increased by 258 percent. The earnings growth rate for Black and Hispanic females was 227 percent and 235 percent, respectively. The growth in earnings among the males ranged from 186 percent for Blacks, to 173 percent for Whites, to 160 percent for Hispanics.

### *College Graduates*

Figure 24 shows trends in the ratio of male to female annual earnings for White, Black, and Hispanic college graduates since 1975. White college graduates earned considerably more than Black and Hispanic graduates, and within each racial/ethnic group, males earned more than females.

The largest difference between males and females was for White college graduates. In 1997, the ratio of male to female income was 1.7 to 1 ($51,678 versus $30,041). While still a wide difference, this ratio decreased from 2.4 to 1 in 1975. The next largest difference was for Hispanic college graduates, where the ratio of male to female income was 1.3 to 1 ($37,963 versus $29,173), down from about 2 to 1 in 1975. Among Black college graduates, the gap was the smallest. The ratio of male to female income for Black college graduates was 1.2 to 1 ($35,792

versus $29,091). The trend line for Black college graduates was flatter than for White and Hispanic college graduates. The 1997 ratio of 1.2 to 1 was not dramatically different than the 1975 ratio of 1.4 to 1.

Another way to analyze these trends is to look at the growth in income from 1975 to 1997. Growth was highest for White and Hispanic females, whose average incomes grew by about 340 percent. The incomes of White and Hispanic males grew by about 220 percent. The lowest income growth, 195 percent, was found among Hispanic males.

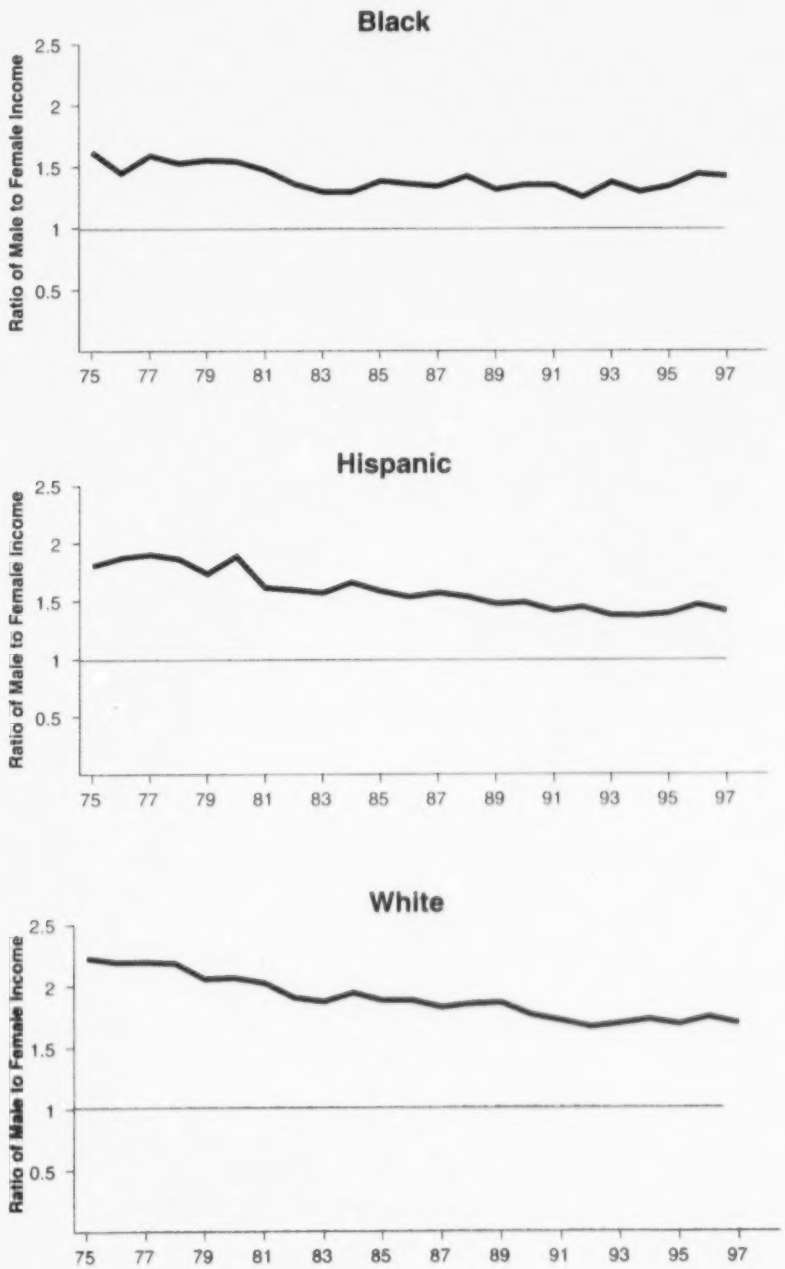
**Notes and sources:**

Data are from U.S. Bureau of the Census, Current Population Survey. Table A-3. *Mean Earnings of Workers 18 Years Old and Over, by Educational Attainment, Race, Hispanic Origin, and Sex: 1975 to 1997*, April 5, 1999.

People of Hispanic origin may be of any race.

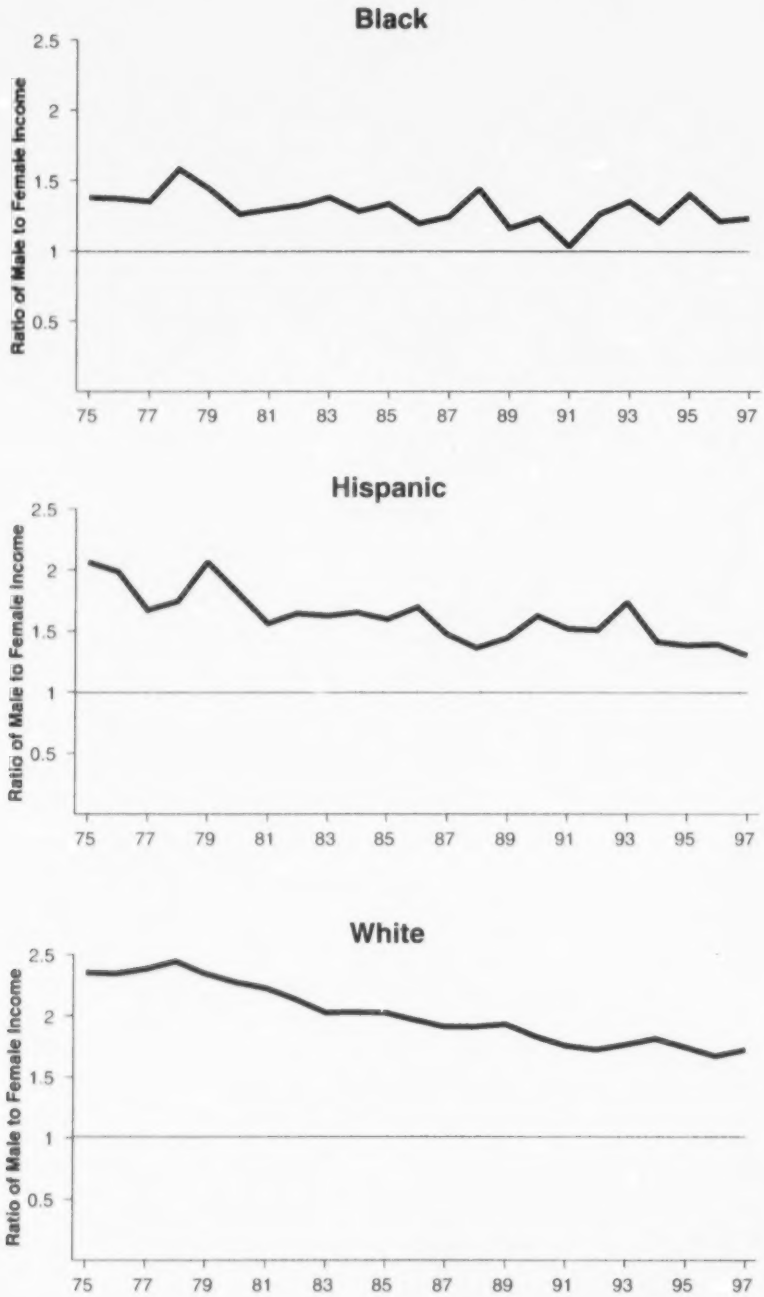
**Black, Hispanic, and White male high school graduates earned more than females, but the gap has decreased.**
**White males had the largest income advantage.**

Figure 23: Trends in the Ratio of Average Male to Female Income for High School Graduates Age 18 and Over, by Racial/Ethnic Group, 1975 – 1997



**Black, Hispanic, and White male college graduates earned more than females, but the gap has decreased. White males had the largest income advantage.**

Figure 24: Trends in the Ratio of Average Male to Female Income for College Graduates Age 18 and Over, by Racial/Ethnic Group, 1975 – 1997



# EMPLOYMENT

Employment population ratios, the percentage of individuals employed either full time or part time, provide important information on the extent to which men and women from each racial/ethnic group are participating in the labor force, and how that has changed over time. Here we examine these ratios for individuals between the ages of 25 and 54, the prime earning years.

Overall, males were more likely than females to be employed. In 1998, about 90 percent of Hispanic and White males and about 80 percent of Black males were employed. In contrast, the employment rates for females were 73 percent for Blacks, 61 percent for Hispanics, and 74 percent for Whites. Over the past 30 years or so, females have increased their employment rates considerably, while the ratios for males have been relatively level.

Figure 25 shows trends in the percentage point differences in the employment rate between males and females in each racial/ethnic group. For all groups, the gap has closed. For Black adults, the gap of 30 percentage points favoring males in 1970 has shrunk to only 6 percentage points in 1998. While the gap has shrunk considerably for Whites and Hispanics also, in 1998 there was still a 26 percentage point gap for Hispanics and a gap of 16 percentage points for Whites.

**Notes and sources:**

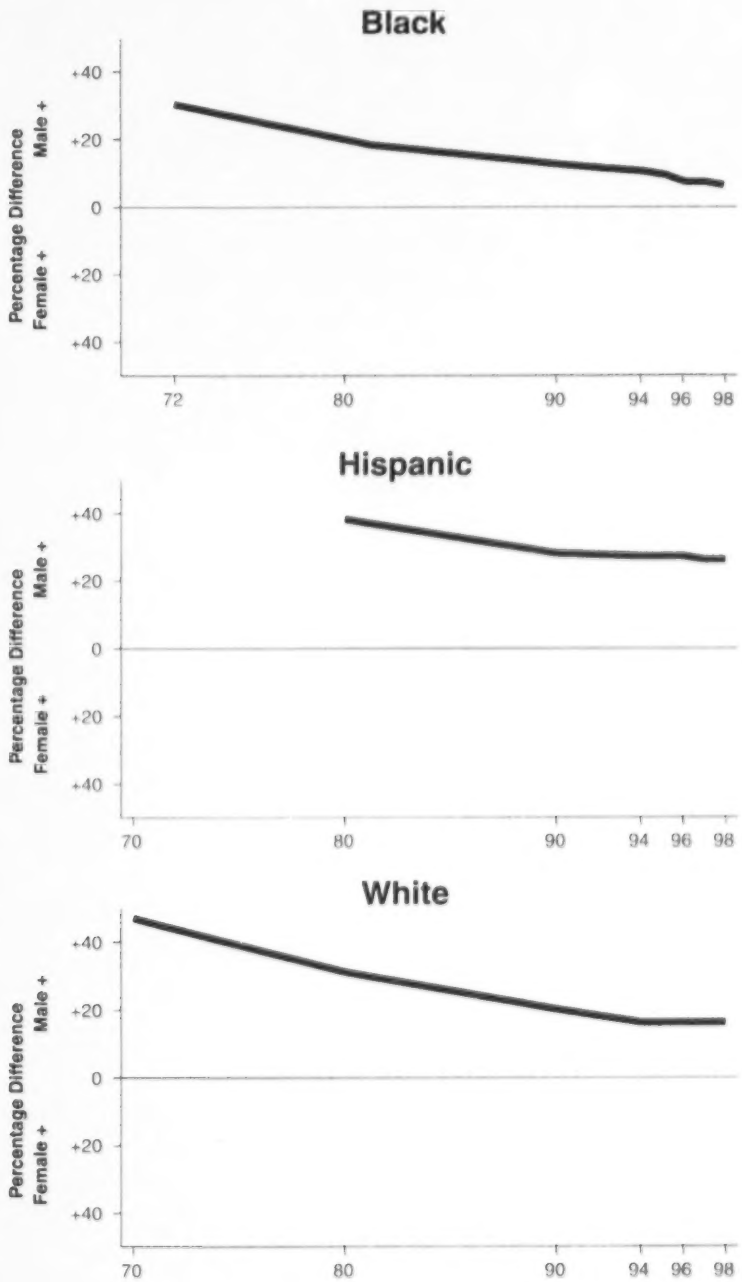
Data are from Current Population Survey, U.S. Department of Labor, Bureau of Labor Statistics.

Data for Hispanics are not available for 1970. Data for Blacks were not available until 1972.

Figure 25 shows the difference between the percentage of men and women who were employed.

**Across all racial/ethnic groups, males were more likely than females to be employed, but the gap has closed.**
**White and Hispanic females still lag considerably behind their male counterparts.**

Figure 25: Trends in Differences Between Male and Female 25- to 54-Year-Olds in the Employment Ratio, by Racial/Ethnic Group, 1970 – 1998



# Conclusion

Examinations of gender differences in education and related outcomes within racial/ethnic groups can help us better understand differences in educational achievement and opportunity. The comparison of gender differences within racial/ethnic groups described in this report revealed more similarities than differences, however. That is, on most measures, gender differences did not vary much from one racial/ethnic group to another. A previous analysis of gender differences within racial/ethnic groups by Willingham and Cole (1997) found generally consistent patterns in educational achievement data:

> *In representative samples of students, there were some different patterns, but contradictory results of different sets of data lead to the conclusion that gender differences on these types of tests probably do not vary much from one ethnic group to another in the general population. There were some consistent differences in the pattern of gender differences for some selective tests and samples. Among Black students taking undergraduate admissions tests (ACT and SAT), women were more likely to sit for the tests, and more likely to perform well compared to Black men, than was true in other groups. Also, Black women were considerably more likely to take AP examinations than were Black men, but scored just as well.*[10]

A review of the elementary and secondary education achievement data included in this report from NAEP found that females in all racial/ethnic groups scored higher, on average, than males in reading, writing, and civics. There was an advantage found in science for Hispanic and White males. In mathematics, essentially no differences between males and females were found.

An analysis of SAT I scores showed that in mathematics, male college-bound seniors had higher average scores than did females across all racial/ethnic groups. On the verbal part of the test, males scored higher, on average, than females, except for Black college-bound seniors, where Black females scored higher than Black males. On the graduate admissions tests examined in this report (GRE and GMAT), males scored higher than females across all racial/ethnic groups. Differences were largest in the quantitative areas.

A look at the courses taken in high school by college-bound seniors who took the SAT revealed a pattern of improvement for females in all racial/ethnic groups. As the 1990s ended, females had closed the gap with males in taking a comprehensive academic curriculum in high school, in taking four years of mathematics, and in taking four years of science. Females were also overrepresented among all Advanced Placement candidates, although in some subjects this pattern is reversed. In an examination of differences between males and females in scores on three AP Examinations, females in all racial/ethnic groups tended to score about as well as males in English Literature and Composition and to score lower than males in Biology and Calculus AB.

Females have made dramatic progress in educational attainment, across all racial/ethnic groups, pulling even with (and in some cases, surpassing) males. Today, White, Black, and Hispanic females are more likely than their male counterparts to graduate from college. That advantage has not translated into higher earnings, however. Across all racial/ethnic groups, females earn less than males with the same level of education, although there has been significant improvement over time. In 1997, for every $1.00 earned by a White, Hispanic, or Black female with a college education, a White male earned $1.70, a Hispanic male earned $1.30, and a Black male earned $1.20.

Finally, a comparison of employment ratios revealed that in all racial/ethnic groups, males are more likely than females to be employed (either full time or part time), but the gap is closing. The employment gap is largest for White and Hispanic females, who still lag considerably behind males.

10 Willingham and Cole, 1997.

This study suggests that the nature of gender inequality in education is a complex phenomenon. There is neither a pattern of across-the-board male advantage nor a pattern of across-the-board female advantage. Rather, females are outperforming males in some respects, and in others, males are outperforming females. Indeed, for some indicators there are no gender differences at all. This apparent variation supports neither the view that the educational establishment systematically discriminates against females, nor the view that the system is conspiring to wage a war against boys. Rather, the data support the more moderate view that these gender differences are complicated and that the nature of the difference or lack of difference depends on the type of outcome examined.

While the picture of gender differences in general proved complex, the picture of differences in gender differences among racial/ethnic groups proved simpler. By and large, gender differences do not seem to vary much by race/ethnicity. This cross-cutting nature of gender differences across groups suggests that policies to remedy educational inequalities must treat gender, as well as race/ethnicity, as a crucial factor.